Appendix X

Dredging System Documentation

A S1 OFF LOADING PAD - PLAN

SCALE: 1/1" = 1'-0"

NORTH

CONSTRUCTION NOTES:

1. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS INCLUDING, BUT NOT NECESSARILY LIMITED TO:
   - 1.1. THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
   - 1.2. THE AMERICAN WELDING SOCIETY (AWS)
   - 1.3. OSHA CFR 29
2. USE TIMBER DISTRIBUTION MATS TO LIMIT CONSTRUCTION SURCHARGE PRESSURE. DESIGN CONSTRUCTION / EQUIPMENT SURCHARGE PRESSURE IS 500 PSF.
3. CANTILEVERED SHEET PILING DESIGN USES RANKINE EARTH PRESSURES. NOTIFY GGE OF ENCOUNTERED DRIVING/PENETRATION RESISTANCE AFTER FIRST DAY OF DRIVING SHEET PILING. LOW PENETRATION RESISTANCE / "EASY" DRIVING CONDITIONS MAY INDICATE WEAKER SOIL CONDITIONS THAN WERE ESTIMATED IN THE DESIGN AND MAY WARRANT THE USE OF GEOTEXTILE/GEOGRID REINFORCEMENT IN THE BACKFILL, OR ADDING INTERNAL BRACING (i.e., WALERS AND TIES) FOR ADDITIONAL SUPPORT.

MATERIALS:

1. SHEETPILE MATERIAL SHALL COMPLY WITH ASTM A572 GR. 50 (Fy = 50 KSI, MIN.), AND SHALL BE PRODUCED BY "HOT ROLLING".
2. SHEETPILING SHALL PROVIDE A MIN. SECTION MODULUS OF 24in³/ft. USE AZ19-700 SECTIONS BY ARCELOR, OR EQUAL.
3. PROVIDE "TIGHT" CORNERS USING STOCK OR FABRICATED CORNER SECTIONS WITH COMPATIBLE INTERLOCKS.
4. SUPPLEMENTAL STRUCTURAL STEEL SHALL COMPLY WITH:
   - 4.1. WIDE FLANGE "W" SHAPES - ASTM A992, Fy = 50 KSI.
   - 4.2. "HP" SHAPES - ASTM A572 GR. 50 (Fy = 50 KSI)
   - 4.3. HSS SECTIONS - ASTM A500, Gr. B, Fy = 42 KSI
   - 4.4. MISC. PLATES AND CHANNELS - ASTM A36, Fy = 36 KSI
5. ALL BOLTS SHALL BE ASTM A 325. ALL BOLTED CONNECTIONS SHALL TYPE "N" BEARING CONNECTIONS. BOLTS SHALL BE "SNUG-TIGHT" AS A MINIMUM.
6. ALL WELDING SHALL BE PERFORMED AND INSPECTED IN ACCORDANCE WITH AWS D1.1.
7. TIMBER MATS SHALL BE NOM. 12" THICK AND JOINED BY ANCHORS RODS AT 10'-0" O.C. MATS SHALL BE PROVIDE MIN. ALLOWABLE FLEXURAL STRESS OF 1,250 psi.
8. OFF-LOADING PAD FILL MATERIAL SHALL BE GRANULAR FILL AS APPROVED FOR THIS PROJECT (WASHED SAND OR APPROVED ALTERNATE),

GENERAL CONSTRUCTION PROCEDURES:

1. INSTALL PAD PERIMETER SHEET PILING TO GRADE AND DIMENSIONS SHOWN.
2. PREPARE EXISTING SLOPE SURFACE (SUBGRADE) BY GRADING AND TILLING TO ROUGHEN SURFACE AT SUBGRADE / FILL INTERFACE.
3. PLACE AND COMPACT PAD FILL MATERIAL IN APPROX. 12" LIFTS (± 3"). IN-PLACE FIOLL SHALL BE COMPACTED TO 90% OF MODIFIED PROCTOR DENSITY (ASTM D1557).

GGE
CIVIL • STRUCTURAL • GEOTECHNICAL
MATERIALS TESTING • CONSULTING

GLYNN GEOTECHNICAL ENGINEERING
415 S. TRANSIT STREET
LOCKPORT, NEW YORK 14094
www.glynngroup.com
VOICE (716) 625 - 6933 / FAX (716) 625 - 6983

3.13.19
NJ PE 37008

ITEM	DATE	REVISION
1	01.11.19	REVISED - ISSUED FOR CONSTRUCTION
1	01.01.19	ISSUED FOR CONSTRUCTION
0	02.22.19	ISSUED FOR REVIEW

THIS DRAWING USES BASE SITE PLAN DWG. C.102 PREPARED BY WESTON SOLUTIONS, INCLUDED AS A REFERENCE. PLAN WITH THIS OFF LOADING PAD DESIGN PREPARED BY GLYNN GEOTECHNICAL ENGINEERING (GGE).

CLIENT:
Sevenson Environmental Services, Inc.

MARK W. GLYNN, PROFESSIONAL ENGINEER.
NJ LICENSE #24GE03700800

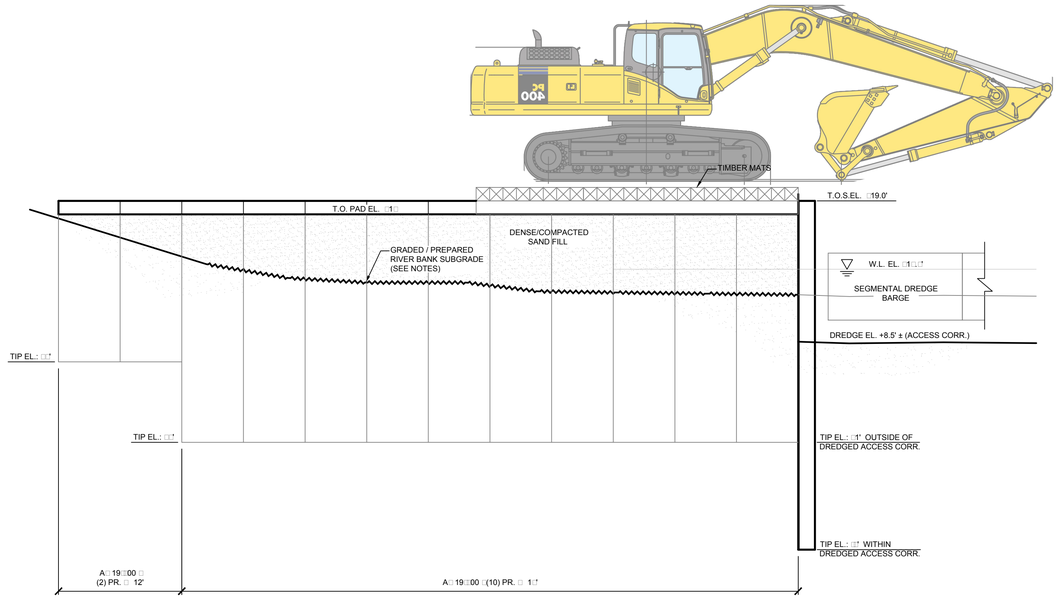
PROJECT:
WOODBRIDGE POND REMEDIATION
CONSTRUCTION, HATCO CORP. SITE
WOODBRIDGE TWP, FORDS, NJ

TITLE:
OFF LOADING STRUCTURE PLAN
PLAN NOTES

GGE PROJ #: 19-1022
GGE FILE: O:\...\...d\...P:\d.d:\...
DRAWN BY: JJ /mwf
CHECKED BY: mwg

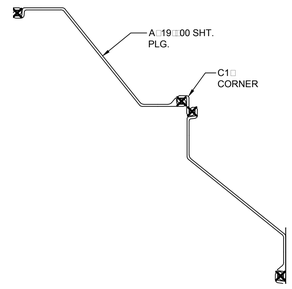
DWG: S1

SHEET 1 OF 2



1 / S2 OFF LOADING PAD □SECTION

SCALE: ⁄" □ 1'-0"



A / S2 SHT. PLG. CORNER DETAIL

SCALE: 1" □ 1'-0"

GCE

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MATERIALS TESTING • CONSULTING

GLYNN GEOTECHNICAL ENGINEERING
415 S. TRANSIT STREET
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3.13.19
NJ PE 37008

ITEM:	DATE:	REVISION:
2	0□1□19	REVISED □ ISSUED FOR CONSTRUCTION
1	0□0□19	ISSUED FOR CONSTRUCTION
0	02.22.19	ISSUED FOR REVIEW

CLIENT:
Sevenson Environmental Services, Inc.

MARK W. GLYNN, PROFESSIONAL ENGINEER.
NJ LICENSE #24GE03700800

PROJECT:
WOODBRIDGE POND REMEDIATION
CONSTRUCTION, HATCO CORP. SITE
WOODBRIDGE TWP, FORDS, NJ

TITLE:
OFF LOADING STRUCTURE □
SECTION □ DETAILS

GGE PROJ □ 19□1022
GGE FILE: O□L□d□□ P□d.d□□
DRAWN BY: □/□□
CHECKED BY: □□□

DWG: S2

SHEET 2 OF 2

N

CHANNEL (UPSTREAM)

PC120 AND SPUD BARGE

WORK BOAT

MINI SCOW

STAGING AREA

ACCESS CHANNEL

CHANNEL (DOWNSTREAM)

CHANNEL (UPSTREAM)

LEGEND

- EXISTING GRADE (201□)
- DREDGE LIMITS
- OPEN WATER BOUNDARY

0 50 100 FEET

NOTE:
1) TURBIDITY CURTAIN NOT SHOWN. SEE APPENDIX FOR TYPICAL LOCATION AND LAYOUTS.

DREDGING LAYOUT AND SEQUENCING

WESTON SOLUTIONS, INC
WOODBRIDGE POND REMEDIATION
WOODBRIDGE TOWNSHIP, NJ

SEVENSON ENVIRONMENTAL SERVICES, INC.

FIGURE 1

DATE:	2/1/2019
DRAWN BY:	WRC
CHECKED BY:	MM
CAD FILE:	SEQUENCE
SCALE:	AS SHOWN

LEGEND

- DREDGE TEMPLATE
- E□ISTING GRADE (201□)
- DREDGE LIMITS
- OPEN WATER BOUNDARY

TSCA SEDIMENTS
(PCB □50 MG/KG)

ACCESS CHANNEL

UPLAND
STAGING
AREA

0 50 100
F□□□

NOTE:
1) BATHYMETRY TO BE UPDATED BASED ON PRE□DREDGE SURVEY.

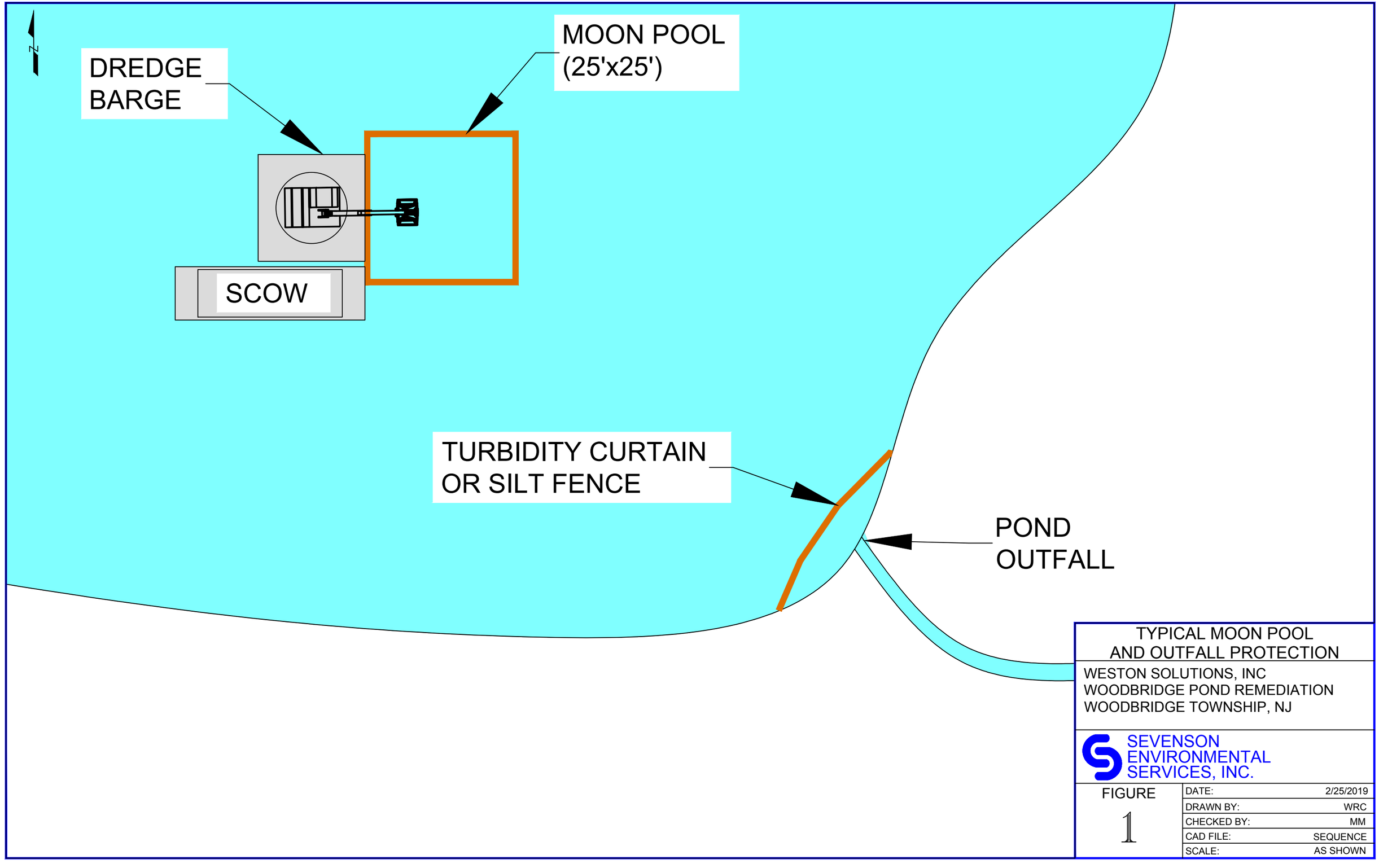
DREDGE TEMPLATE

WESTON SOLUTIONS, INC
WOODBRIDGE POND REMEDIATION
WOODBRIDGE TOWNSHIP, NJ

SEVENSON
ENVIRONMENTAL
SERVICES, INC.

FIGURE
2

DATE:	2/1/2019
DRAWN BY:	WRC
CHECKED BY:	MM
CAD FILE:	DREDGE
SCALE:	AS SHOWN



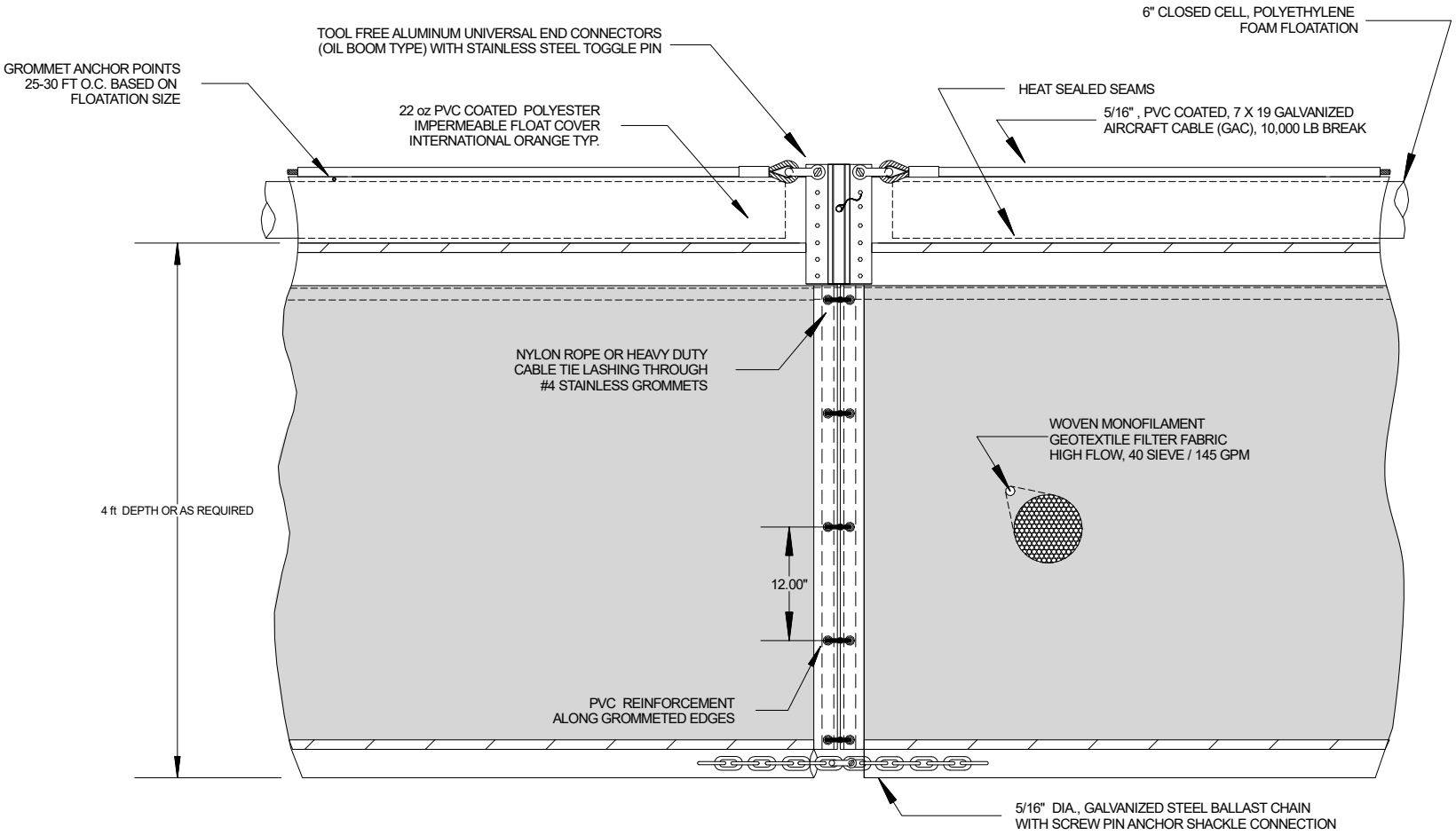
TYPICAL MOON POOL AND OUTFALL PROTECTION

WESTON SOLUTIONS, INC
WOODBRIDGE POND REMEDIATION
WOODBRIDGE TOWNSHIP, NJ

SEVENSON ENVIRONMENTAL SERVICES, INC.

FIGURE
1

DATE:	2/25/2019
DRAWN BY:	WRC
CHECKED BY:	MM
CAD FILE:	SEQUENCE
SCALE:	AS SHOWN



Heavy Duty, High Flow, Permeable Turbidity Barrier

IWT/ Cargo-Guard
"Protecting The Environment"
PO Box 454
Waretown, NJ 08758
609-971-8810 Fax 609-971-8805
www.iwtcargoguard.com

NO.	REVISION	DATE

PREPARED FOR: Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

PROJECT: Hatco Site
Woodbridge, NJ

DATE	DRAWN BY:
03-04-2019	TJP
SCALE: N.T.S.	REVIEWED BY:
DRAWING NO.: 01 of 01	

WINFAB INDUSTRIAL FABRICS

PRODUCT DATA SHEET

WINFAB 2197

SEPARATION FILTRATION REINFORCEMENT

WINFAB 2197 is manufactured using high tenacity polypropylene yarns that are woven to form a dimensionally stable network, which allows the yarns to maintain their relative position.
WINFAB 2197 resists ultraviolet deterioration, rotting, and biological degradation and is inert to commonly encountered soil chemicals.

PROPERTY	TEST METHOD	MARV English	MARV Metric
Tensile Strength (Grab)	ASTM D-4632	365 x 200 lbs	1624 x 890 N
Elongation	ASTM D-4632	24 x 15%	24 x 15%
CBR Puncture	ASTM D-6241	750 lbs	3336 N
Trapezoidal Tear	ASTM D-4533	115 x 75 lbs	512 x 334 N
Wide Width Tensile (Ultimate)	ASTM D-4595	2400 x 1680 lbs/ft	35 x 24.52 kN/m
UV Resistance (500 hrs)	ASTM D-4355	90%	90%
Apparent Opening Size (AOS)*	ASTM D-4751	40 US Std. Sieve	0.425 mm
Percent Open Area (POA)	COE-02215	10%	10%
Permittivity	ASTM D-4491	2.1 sec $^{-1}$	2.1 sec $^{-1}$
Permeability	ASTM D-4491	.14 cm/sec	.14 cm/sec
Water Flow Rate	ASTM D-4491	145 gpm/ft^2	5907 lpm/m^2

***Maximum Average Roll Valve**

Notes:
- Mullen Burst ASTM D-3786 has been removed. It is not recognized by ASTM D-35 on Geosynthetics.
- Puncture ASTM D-4833 has been removed. It is not recognized by AASHTO M288 and has been replaced with CBR Puncture ASTM D-6241

PROPERTY	Typical English	Typical Metric
Roll Dimensions	6 x 300 ft 12 x 300 ft	1.83 x 91.5 m 3.65 x 91.5 m
Roll Area	200 yd^2 400 yd^2	167 m^2 334 m^2

Willacoochee Industrial Fabrics, Inc.
PO Box 599 • 769 West Main Street • Willacoochee, GA 31650
Ph: (912) 534-5757 • Fax: (912) 534-5533

GMA Geosynthetic Materials Association

NET HORSEPOWER
66.2 kW **89 HP** @ 2200 rpm

OPERATING WEIGHT
12600–12871 kg **27,780–28,375 lb**

BUCKET CAPACITY
0.34–0.70 m³ **0.44–0.92 yd³**

KOMATSU®

PC120-6
PC120LC-6

With Tier 2 SAA4D102E-2 Engine

Photo may include optional equipment.

HYDRAULIC EXCAVATOR

Courtesy of Machine.Market

WALK-AROUND

Since its original introduction, the PC120-6 has set new standards for productivity and control. The improved PC120-6 introduces several outstanding new features to provide the operator with a faster, quieter and easier-to-service machine.

Cushioned cylinders not only minimize shock but provide fast cycle times.

Windshield Wiper is mounted to the cab for better visibility and easier window opening.

Advanced Monitor Features

- Self-diagnosis of 119 different problems.
- 5 working modes as standard, including breaker mode for maximum productivity
- Active-mode for increased implement speed.
- Oil maintenance reminder

Cast steel is used for critical parts on both the boom and arm for increased durability.

Large undercarriage components are sealed for maximize durability.

Komatsu distributors offer a wide variety of attachments that take advantage of the PC120-6's exceptional versatility.

Courtesy of Machine.Market

Komatsu offers over 20 different excavator models.

Large boom cylinders provide maximum lift capacity.

Comfortable Cab Komatsu's low-noise cab design uses viscous cab mounts for reduced noise and vibration.

Protected Hydraulic Circuit The cool-running hydraulic system is protected with the most extensive filtration system available.

New Komatsu SAA4D102E-2 turbocharged, aftercooled diesel engine provides an output of 66.2 kW 89 HP with excellent productivity. This engine is Tier 2 EPA, EU and Japan emissions certified.

Three-speed travel for smooth and efficient job site travel.

Courtesy of Machine.Market

SELF-DIAGNOSTIC MONITOR

Self-Diagnostic System ...

The PC120-6 features the most advanced diagnostic system in the industry. Komatsu's exclusive system identifies 119 items, reduces diagnostic time, and helps you maintain maximum production. The LCD portion of the monitor has four different display modes that aid in identifying potential problems before they become major problems:

Active mode + power up

The exclusive Active Power Max mode, which is turned on via a switch on the monitor panel and on the left control lever, increases engine speed, and the hydraulic relief pressure, for more powerful and faster operation.

1 ***Time Display*** mode is the default mode and shows the time and hour meter reading.

2 The ***User Code Display*** mode displays a trouble code and sounds an alarm when a problem has been detected.

3 The ***Trouble Data Memory*** mode monitors 32 separate items and stores up to 20 abnormalities over 999 hours for effective troubleshooting.

4 The ***Operation Data*** mode monitors 20 separate current operating conditions including system pressure and rpms to keep your machine operating at peak performance. In addition, 44-bit patterns allow you to diagnose electrical connections.

Together these modes allow you to troubleshoot 119 different problems to minimize downtime.

WORKING MODE SELECTION

The ***Avance*** excavator is equipped with five working modes. Each mode is designed to match engine speed, pump speed, and system pressure with the current application.

Working Mode	Application	Advantage
H/O	Heavy-Duty	• Max. Production/Power • Fast Cycle Times • Power Up/Speed Down Available
G/O	General	• Good Cycle Times • Good Fuel Economy • Power Up/Speed Down Available
F/O	Finishing	• Smooth Finishing Capability • Arm in 1/2 Speed
L/O	Lifting	• Powerful Lifting • Power Max. Pressure 100% of the Time • Reduced Speed • Precision Control
B/O	Breaker Operations	• Optimum Engine RPM, Hydraulic Flow and Pressure

POWER UP/SPEED DOWN SWITCH*

A button on top of the left joystick provides an instant burst of power at either full speed or half speed depending on the selection made on the monitor.

Selection	Application	Result
Power Up	Tough Digging Operations	Increase implement force by 9% for 8.5 seconds.
Speed Down	Delicate Operations	Speed is reduced by 1/2. Increase implement force by 9% as long as joystick button is pressed.

Power, versatility, maneuverability, controllability—you name it. Never has there been an excavator so easy to operate, so natural, so intuitive, so responsive.

HydrauMind allows the load-sensing and pressure compensating valves to automatically adjust to individual work applications. Adjustments are sensed by the valves. Electronic controls maximize the engine horsepower so full horsepower is available at all times.

FOR EXAMPLE ... when the ground condition changes while digging, you don't have to think about changing lever strokes because HydrauMind instantly, silently, and automatically sends just the right amount of oil to the actuators at just the right pressure to accommodate the change.

When you move the boom, arm, and bucket at the same time, all the equipment works naturally, with the optimum combination of speed and power as if it were a human hand.

HydrauMind also makes it easy to change or add valves and work equipment.

ENGINE

The new Komatsu SAA4D102E-2 engine is Tier 2 EPA, EU, and Japan emissions certified. A new hydraulic pump produces the same power as in the previous model at reduced engine speed. The new engine provides improved emissions without sacrificing valuable hydraulic power. Also, noise levels are reduced for improved operator comfort.

HYBRID FILTER ELEMENT

The PC120-6 has a cool-running hydraulic system with the most extensive filtration system available. It uses a new high-performance filter glass for improved cleanliness and extended replacement interval. The wide variety of attachments available today means you put more stress on your excavator than ever before.

Courtesy of Machine.Market

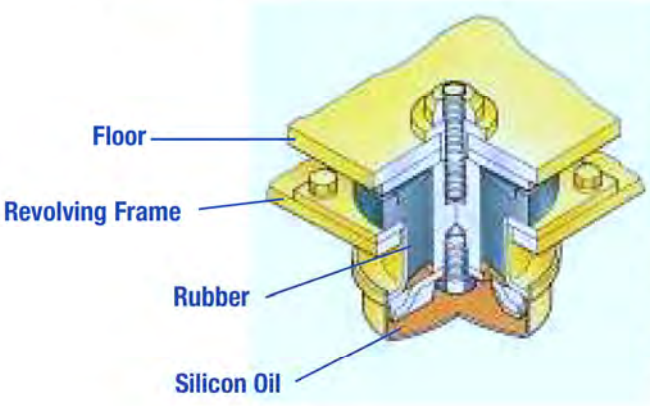
COMFORTABLE CAB

MULTI-POSITION CONTROLS

The multiple position, pressure proportional control levers allow the operator to work in comfort while maintaining precise control.

A double slide mechanism allows the seat and controllers to move together or independently, allowing the operator to position the controllers for maximum productivity and comfort.

The multi-position diagnostic monitor is easily reached and can be rotated to remove glare. Plus, the inclined dashboard makes the switches and fuel control dials easier to view and use.



NOISE

The noise levels at the operator's ear have been decreased by improving the cab mounts. In addition, a mixed-flow fan reduces fan speed and channels air around the engine, reducing noise.

CAB MOUNTS

The cab rests on viscous damping mounts to reduce vibration and noise from the machine body. This results in reduced operator fatique.

Cab Mounts

Courtesy of Machine.Market

The Avance cab interior is spacious and provides a comfortable working environment . . . .

PC120-6
Hydraulic Excavator

Net Horsepower:
66.2 kW **89 HP** @ 2,200 RPM

Operating Weight:
12600–12871 kg
27,780–28,375 lb

Bucket Capacity:
0.34 - 0.70 m^3
0.44 - 0.92 yd^3

1. ADJUSTABLE MONITOR
2. STARTER SWITCH
3. FUEL CONTROL DIAL
4. INCLINED DASHBOARD
5. ADJUSTABLE ARMRESTS
6. OPTIONAL AIR CONDITIONING
7. FULLY ADJUSTABLE SEAT
8. HOT / COLD STORAGE COMPARTMENTS
9. LOW EFFORT JOYSTICKS
10. OPERATOR WEIGHT ADJUSTMENT

SPECIFICATIONS

ENGINE

Model . . . . . Komatsu SAA4D102E-2
Type . . . . . 4 cycle, water-cooled, direct-injection
Aspiration . . . . . Turbocharged, and air to air aftercooled
No. of cylinders 4
Bore . . . . . 95 mm **3.74"**
Stroke . . . . . 115 mm **4.53"**
Piston displacement . . . . . 3.26 ltr. **199 in³**
Flywheel horsepower:
66.2 kW **89 HP** at **2200 RPM** (SAE J1349)
Governor. . . . . All-speed, mechanical

HYDRAULIC SYSTEM

Type. . . . . HydrauMind (Hydraulic Mechanical Intelligence New Design) system. Closed-center system with load-sensing valves and pressure-compensated valves.
No. of selectable working modes 5
Main pump:
Type . . . . . Variable-displacement piston pump
Pumps for . . . . . Boom, arm, bucket, swing, and travel circuits
Maximum flow . . . . . 1 x 226.3 ltr. **1 x 59.8 gpm**/min.
Sub-pump for control circuit . . . . . Gear pump
Hydraulic motors:
Travel . . . . . 2 x Axial piston motor with parking brake
Swing . . . . . 1 x Axial piston motor with swing holding brake
Relief valve setting:
Implement circuits . . . . . 325 kg/cm² **4,620 PSI**
Travel circuit . . . . . 355 kg/cm² **5,050 PSI**
Swing circuit . . . . . 275 kg/cm² **3,910 PSI**
Pilot circuit . . . . . 30 kg/cm² **430 PSI**
Service valve. . . . . 280 kg/cm² **3,983 PSI**
Hydraulic cylinders:
Number of cylinders – bore x stroke
Boom . . . . . .2 – 105 mm x 990 mm **4.1" x 39.0"**
Arm . . . . . .1 – 115 mm x 1175 mm **4.5" x 46.3"**
Bucket . . . . . .1 – 95 mm x 885 mm **3.7" x 34.8"**
Service valves maximum flow:
First valve. . . . . 226 ltr./min **59.7 gpm**
Second valve . . . . . 113 ltr./min. **29.9 gpm**
Third valve . . . . . 113 ltr./min. **29.9 gpm**

DRIVES & BRAKES

Steering control . . . . . Two levers with pedals
Drive method . . . . . Fully hydrostatic
Travel motor . . . . . Axial piston motor, in-shoe design
Reduction system. . . . . Planetary gear, double -reduction
Max. drawbar pull . . . . . PC120-6: 10200 kg **22,487 lb**
PC120LC-6: 11100 kg **24,470 lb**
Max. travel speed (High). . . . . 5.0 km/h **3.1 MPH**
Max. travel speed (Mid) . . . . . 3.3 km/h **2.1 MPH**
Max. travel speed (Low) . . . . . 2.5 km/h **1.6 MPH**
Service brake. . . . . Hydraulic lock
Parking brake. . . . . Oil disc brake

SWING SYSTEM

Driven by . . . . . Hydraulic motor
Swing reduction . . . . . Planetary double reduction
Swing circle lubrication . . . . . Grease-bathed
Swing lock . . . . . Oil disc brake
Swing speed. . . . . 11.0 RPM
Swing torque . . . . . 2991 kg.m **21,627 ft lb**

UNDERCARRIAGE

Center frame. . . . . X-frame
Track frame . . . . . Box-section type
Seal of track. . . . . Sealed track
Track adjuster . . . . . Hydraulic type
No. of shoes PC120-6: . . . . . 42 ea side
PC120LC-6 . . . . . 46 ea side
No. of carrier rollers PC120-6: . . . . . 1 ea side
PC120LC-6 . . . . . 2 ea side
No. of track rollers PC120-6. . . . . 7 ea side
PC120LC-6 . . . . . 8 ea side

COOLANT & LUBRICANT CAPACITY (REFILLING)

Fuel tank	240 ltr.	**63.4 U.S. gal**
Radiator	18.2 ltr.	**4.8 U.S. gal**
Engine	17.5 ltr.	**4.6 U.S. gal**
Final drive, each side	3.0 ltr.	**0.8 U.S. gal**
Swing drive	2.5 ltr.	**0.7 U.S. gal**
Hydraulic tank	100 ltr.	**26.4 U.S. gal**

OPERATING WEIGHT

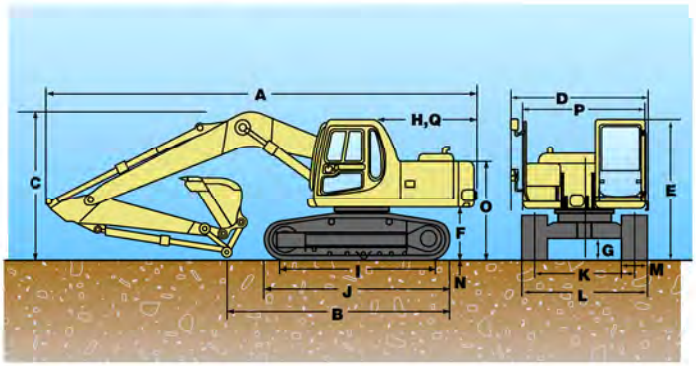
Operating weight, including 4600 mm **15'1"** one-piece boom, 2500 mm **11'10"** arm, SAE heaped 0.5 m³ **0.65 yd³** back-hoe bucket, operator, lubricant, coolant, full fuel tank, and standard equipment.

		Standard				LC			
Shoes		Operating Weight		Ground Pressure		Operating Weight		Ground Pressure	
mm	in	kg	lb	kg/cm²	psi	kg	lb	kg/cm²	psi
500	**20"**	12030	**26,522**	0.40	**5.69**	N/A	**N/A**	N/A	**N/A**
600	**24"**	12220	**26,940**	0.34	**4.83**	12600	**27,780**	0.33	**4.74**
700	**28"**	12400	**27,337**	0.30	**4.27**	12800	**28,220**	0.29	**4.12**
750	**30"**	12490	**27,535**	0.28	**3.98**	N/A	**N/A**	N/A	**N/A**

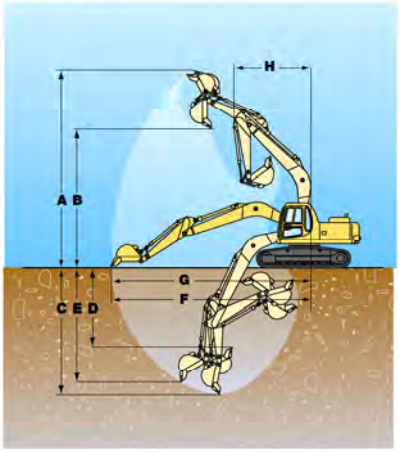
*Maximum weight includes counterweight, full roller guard, and 0.5 m³ **0.65 yd³** bucket.

DIMENSIONS PC120-6

		2.1 m **6'11"** arm	2.5 m **8'2"** arm	3.0 m **9'10"** arm
A	Overall length	7590 mm **24'11"**	7595 mm **24'11"**	7510 mm **24'8"**
B	Length on ground (transport)	4515 mm **14'10"**	4250 mm **13'11"**	4090 mm **13'5"**
C	Overall height (to top of boom)	2620 mm **8'7"**	2715 mm **8'11"**	3075 mm **10'1"**
D	Overall width	2490 mm **8'2"**		
E	Overall height (to top of cab)	2715 mm **8'11"**		
F	Ground clearance, counterweight	855 mm **2'10"**		
G	Min. ground clearance	400 mm **1'4"**		
H	Tail swing radius	2130 mm **7'0"**		
I	Length of track on ground	2750 mm **9'0"**		
J	Track length	3480 mm **11'5"**		
K	Track gauge	1960 mm **6'5"**		
L	Width of crawler	2460 mm **8'1"**		
M	Shoe width	600 mm **24"**		
N	Grouser height	25 mm **1"**		
O	Machine cab height	1805 mm **5'11"**		
P	Machine cab width	2455 mm **8'1"**		
Q	Distance, swing center to rear end	2110 mm **6'11"**		



WORKING RANGE & BUCKET/ARM COMBINATION PC120-6



		2.1 m **6'11"** arm	2.5 m **8'2"** arm	3.0 m **9'10"** arm
A	Max. digging height	8345 mm **27'5"**	8610 mm **28'3"**	8970 mm **29'5"**
B	Max. dumping height	5905 mm **19'4"**	6170 mm **20'3"**	6535 mm **21'5"**
C	Max. digging depth	★5115 mm **16'9"**	5520 mm **18'1"**	★6015 mm **19'9"**
D	Max. vertical wall digging depth	★4520 mm **14'10"**	4940 mm **16'2"**	★5360 mm **17'7"**
E	Max. digging depth of cut for 8' level	★4875 mm **16'0"**	5315 mm **17'5"**	★5835 mm **19'2"**
F	Max. digging reach	7925 mm **26'0"**	8290 mm **27'2"**	8785 mm **28'10"**
G	Max. digging reach at ground	7795 mm **25'7"**	8170 mm **26'10"**	8665 mm **28'5"**
H	Min. swing radius	2290 mm **7'6"**	2330 mm **7'8"**	2485 mm **8'2"**
Bucket digging force★		8500 kg **18,740 lb***	8500 kg **18,740 lb**	8500 kg **18,740 lb**
Arm crowd force		7500 kg **16,535 lb**	6300 kg **13,890 lb**	5250 kg **11,575 lb**

★At power max

BACKHOE BUCKET AND ARM COMBINATION PC120-6

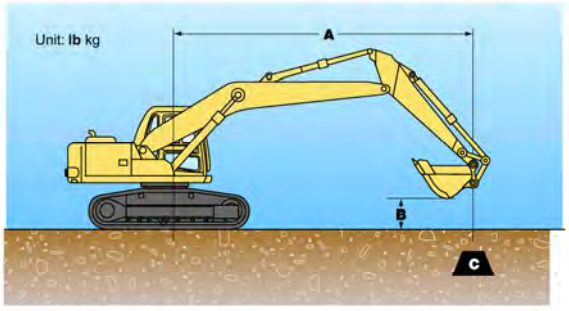
Bucket Type	Bucket Capacity	Bucket OLW	Bucket Weight	Number of Teeth	Tooth Size	Arms 6'11"	Arms 8'2"	Arms 9'10"
Komatsu "H" Series HD	0.35 m³ **0.46 yd³**	610 mm **24"**	421 kg **928 lb**	4	X220	V	V	V
	0.50 m³ **0.65 yd³**	762 mm **30"**	463 kg **1,021 lb**	5	X220	V	V	V
	0.60 m³ **0.79 yd³**	914 mm **36"**	525 kg **1,157 lb**	5	X220	V	W	X
	0.70 m³ **0.92 yd³**	1067 mm **42"**	564 kg **1,244 lb**	6	X220	W	X	Y
Komatsu "H" Series SD	0.34 m³ **0.44 yd³**	610 mm **24"**	441 kg **972 lb**	4	X220AP	V	V	V
	0.45 m³ **0.59 yd³**	762 mm **30"**	509 kg **1,122 lb**	5	X220AP	V	V	V
	0.56 m³ **0.73 yd³**	914 mm **36"**	581 kg **1,280 lb**	5	X220AP	V	V	X
	0.67 m³ **0.88 yd³**	1067 mm **42"**	652 kg **1,437 lb**	6	X220AP	W	X	Y

V – Used with weights up to 3,500 lb/yd³, W – Used with weights up to 3,000 lb/yd³

X – Used with weights up to 2,500 lb/yd³, Y – Used with weights up to 2,000 lb/yd³, Z – Not useable

LIFTING CAPACITIES

LIFTING CAPACITY PC120-6



Equipment:
- Boom: 4600 mm **15'1"**
- Bucket: 0.5 m³ **0.65 yd³**
- Shoes: 500 mm **20"**
- Lifting Mode

A: Reach from swing center
B: Bucket hook height
C: Lifting capacity
Cf: Rating over front
Cs: Rating over side
⟷: Rating at maximum reach

Arm: 2100 mm **6'11"** — Unit: kg **lb**

A / B	1.5 m **5'**		3.0 m **10'**		4.5 m **15'**		6.0 m **20'**		⟷ MAX.	
	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs
6.0 m **20'**					*3400 ***7,500**	3150 **6,900**			*2200 ***4,900**	*2200 ***4,900**
4.5 m **15'**					*3500 ***7,800**	3150 **6,900**	*2500 ***5,500**	1850 **4,100**	*2050 ***4,500**	1800 **4,000**
3.0 m **10'**			*5800 ***12,800**	*5800 ***12,800**	4250 **9,400**	3000 **6,600**	2600 **5,800**	1800 **4,000**	*2100 ***4,600**	1500 **3,300**
1.5 m **5'**			8100 **17,800**	5150 **11,400**	4050 **8,900**	2750 **6,100**	2550 **5,600**	1750 **3,800**	2000 **4,600**	1350 **3,000**
0.0 m **0'**			7700 **17,000**	4850 **10,700**	3800 **8,400**	2550 **5,600**	2450 **5,400**	1700 **3,700**	2050 **4,500**	1400 **3,100**
–1.5 m **–5'**	*5300 ***11,700**	*5300 ***11,700**	7650 **16,900**	4800 **10,600**	3700 **8,200**	2450 **5,400**	2450 **5,400**	1650 **3,600**	2300 **5,100**	1550 **3,500**
–3.0 m **–10'**	*9250 ***20,400**	*9250 ***20,400**	*7350 ***16,200**	4900 **10,800**	3850 **8,500**	2500 **5,700**			3050 **6,800**	2100 **4,600**

Arm: 2500 mm **8'2"** — Unit: kg **lb**

A / B	1.5 m **5'**		3.0 m **10'**		4.5 m **15'**		6.0 m **20'**		⟷ MAX.	
	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs
6.0 m **20'**									*1800 ***3,900**	*1800 ***3,900**
4.5 m **15'**					*3150 ***6,900**	*3150 ***6,900**	2700 **5,900**	1900 **4,200**	*1650 ***3,700**	1600 **3,500**
3.0 m **10'**			*5050 ***11,100**	*5050 ***11,100**	*3900 ***8,600**	3000 **6,700**	2650 **5,800**	1850 **4,000**	*1650 ***3,700**	1350 **3,000**
1.5 m **5'**			*7700 ***17,000**	5300 **11,700**	4100 **9,000**	2800 **6,200**	2550 **5,600**	1750 **3,900**	1800 **4,000**	1250 **2,700**
0.0 m **0'**			7750 **17,100**	4900 **10,800**	3900 **8,600**	2600 **5,800**	2450 **5,400**	1650 **3,700**	1850 **4,100**	1250 **2,800**
–1.5 m **–5'**	*4750 ***10,500**	*4750 ***10,500**	7650 **16,900**	4800 **10,600**	3700 **8,100**	2450 **5,400**	2400 **5,300**	1600 **3,600**	2050 **4,500**	1400 **3,100**
–3.0 m **–10'**	*7950 ***17,500**	*7950 ***17,500**	7700 **17,000**	4850 **10,700**	3800 **8,400**	2550 **5,600**			2650 **5,800**	1800 **3,900**
–4.5 m **–15'**			5200 **10,500**	5050 **11,200**					3550 **7800**	3150 **6900**

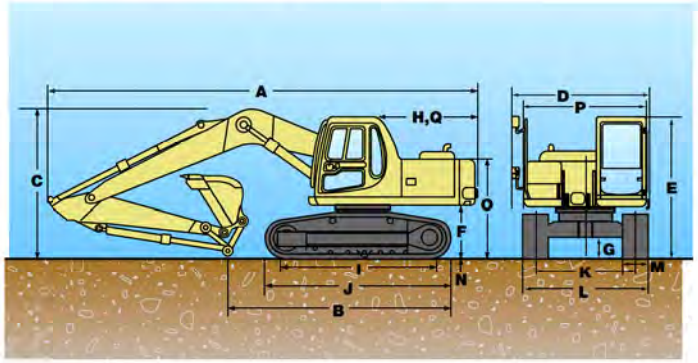
Arm: 3000 mm **9'10"** — Unit: kg **lb**

A / B	1.5 m **5'**		3.0 m **10'**		4.5 m **15'**		6.0 m **20'**		⟷ MAX.	
	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs
6.0 m **20'**							*1850 ***4,100**	*1850 ***4,100**	*1450 ***3,300**	*1450 ***3,300**
4.5 m **15'**							2750 **6,000**	1950 **4,300**	*1350 ***3,000**	*1350 ***3,000**
3.0 m **10'**					*3400 ***7,500**	3100 **6,800**	2650 **5,900**	1850 **4,100**	*1400 ***3,000**	1150 **2,600**
1.5 m **5'**			*6700 ***14,800**	5300 **11,700**	3950 **8,700**	2850 **6,300**	2550 **5,600**	1750 **3,900**	*1450 ***3,200**	1100 **2,400**
0.0 m **0'**			7800 **17,200**	4900 **10,800**	3700 **8,200**	2600 **5,800**	2450 **5,400**	1650 **3,600**	1650 **3,600**	1100 **2,400**
–1.5 m **–5'**	4200 ***9,300***	*4200 ***9,300**	7550 **16,700**	4700 **10,400**	3550 **7,800**	2400 **5,300**	2350 **5,200**	1600 **3,500**	1800 **4,000**	1200 **2,600**
–3.0 m **–10'**	*6800 ***15,000**	*6800 ***15,000**	7550 **16,700**	4700 **10,400**	3500 **7,700**	2400 **5,300**	2400 **5,200**	1600 **3,500**	2200 **4,900**	1500 **3,300**
–4.5 m **–15'**			6300 **13,900**	4900 **10,800**	3650 **8,000**	2550 **5,700**			3350 **7,400**	2300 **5,000**

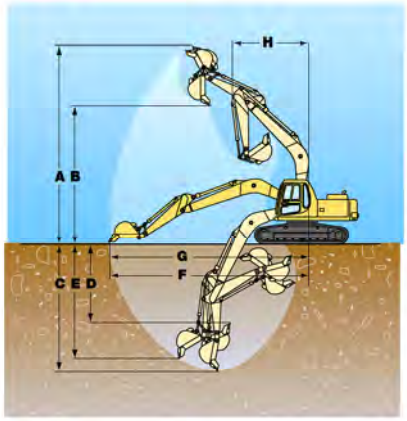
*Load is limited by hydraulic capacity rather than tipping. Ratings are based on ISO Standard No. 10567. Rated loads do not exceed 87% of hydraulic lift capacity or 75% of tipping load.

DIMENSIONS PC120LC-6

		2.1 m **6'11"** arm		2.5 m **8'2"** arm		3.0 m **9'10"** arm	
A	Overall length	7590 mm	**24'11"**	7595 mm	**24'11"**	7510 mm	**24'8"**
B	Length on ground (transport)	4690 mm	**15'5"**	4425 mm	**14'6"**	4265 mm	**14'0"**
C	Overall height (to top of boom)	2620 mm	**8'7"**	2715 mm	**8'11"**	3075 mm	**10'1"**
D	Overall width	2590 mm	**8'6"**				
E	Overall height (to top of cab)	2755 mm	**9'0"**				
F	Ground clearance, counterweight	895 mm	**2'11"**				
G	Min. ground clearance	400 mm	**1'4"**				
H	Tail swing radius	2130 mm	**7'0"**				
I	Length of track on ground	3100 mm	**10'2"**				
J	Track length	3830 mm	**12'7"**				
K	Track gauge	1990 mm	**6'6"**				
L	Width of crawler	2590 mm	**8'6"**				
M	Shoe width	600 mm	**24"**				
N	Grouser height	25 mm	**1"**				
O	Machine cab height	1845 mm	**6'1"**				
P	Machine cab width	2455 mm	**8'1"**				
Q	Distance, swing center to rear end	2110 mm	**6'11"**				



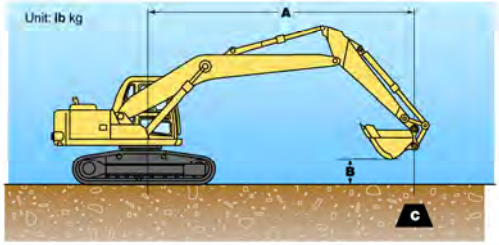
WORKING RANGE & BUCKET/ARM COMBINATION PC120LC-6



		2.1 m **6'11"** arm		2.5 m **8'2"** arm		3.0 m **9'10"** arm	
A	Max. digging height	8385 mm	**27'6"**	8650 mm	**28'5"**	9010 mm	**29'6"**
B	Max. dumping height	5945 mm	**19'6"**	6210 mm	**20'4"**	6575 mm	**21'7"**
C	Max. digging depth	5075 mm	**16'8"**	5480 mm	**18'0"**	5975 mm	**19'7"**
D	Max. vertical wall digging depth	4480 mm	**14'9"**	4900 mm	**16'1"**	5320 mm	**17'6"**
E	Max. digging depth of cut for 8' level	4835 mm	**15'11"**	5275 mm	**17'4"**	5795 mm	**19'0"**
F	Max. digging reach	7965 mm	**26'1"**	8325 mm	**27'4"**	8825 mm	**28'11"**
G	Max. digging reach at ground	7795 mm	**25'7"**	8170 mm	**26'10"**	8665 mm	**28'5"**
H	Min. swing radius	2290 mm	**7'6"**	2330 mm	**7'8"**	2485 mm	**8'2"**
Bucket digging force★		8500 kg **18,740 lb**		8500 kg **18,740 lb**		8500 kg **18,740 lb**	
Arm crowd force		7500 kg **16,535 lb**		6300 kg **13,890 lb**		5250 kg **11,575 lb**	

★At power max

LIFTING CAPACITY PC120LC-6



Equipment:
- Boom: 4600 mm **15'1"**
- Bucket: 0.5 m^3 **0.65 yd^3**
- Shoes: 600 mm **24"**
- Lifting Mode

A: Reach from swing center
B: Bucket hook height
C: Lifting capacity
Cf: Rating over front
Cs: Rating over side
⟲: Rating at maximum reach

Arm: 2500 mm **8'2"** Unit: kg **lb**

A / B	1.5 m **5'**		3.0 m **10'**		4.5 m **15'**		6.0 m **20'**		⟲ MAX.	
	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs
6.0 m **20'**									*1800 ***3,900**	*1800 ***3,900**
4.5 m **15'**					*3150 ***6,900**	*3150 ***6,900**	3050 **6,700**	2050 **4,500**	*1650 ***3,700**	1650 **3,700**
3.0 m **10'**			*5050 ***11,100**	*5050 ***11,100**	*3900 ***8,600**	3250 **7,100**	3250 **7,200**	2000 **4,400**	*1650 ***3,700**	1450 **3,200**
1.5 m **5'**			*7700 ***17,000**	5700 **12,600**	*4900 ***10,800**	3000 **6,700**	3150 **7,000**	1900 **4,200**	*1800 ***4,000**	1350 **3,000**
0.0 m **0'**			*8500 ***18,700**	5300 **11,700**	4900 **10,800**	2850 **6,300**	3100 **6,800**	1800 **4,000**	*2050 ***4,500**	1350 **3,000**
–1.5 m **–5'**	*4750 ***10,500**	*4750 ***10,500**	*9000 ***19,900**	5200 **11,400**	4700 **10,300**	2650 **5,800**	3050 **6,700**	1750 **3,900**	*2550 ***5,700**	1550 **3,400**
–3.0 m **–10'**	*7950 ***17,600**	*7950 ***17,600**	*7900 ***17,400**	5250 **11,600**	4800 **10,600**	2750 **6,100**			3300 **7,300**	1950 **4,300**
–4.5 m **–15'**			*5200 ***11,500**	5200 **11,500**					*3550 ***7,800**	3400 **7,500**

BACKHOE BUCKET AND ARM COMBINATION PC120LC-6

Bucket Type	Bucket								Arms		
	Capacity		OLW		Weight		Number of Teeth	Tooth Size	6'11"	8'2"	9'10"
Komatsu "H" Series HD	0.35 m³	**0.46 yd³**	610 mm	**24"**	421 kg	**928 lb**	4	X220	V	V	V
	0.50 m³	**0.65 yd³**	762 mm	**30"**	463 kg	**1,021 lb**	5	X220	V	V	V
	0.60 m³	**0.79 yd³**	914 mm	**36"**	525 kg	**1,157 lb**	5	X220	V	W	X
	0.70 m³	**0.92 yd³**	1067 mm	**42"**	564 kg	**1,244 lb**	6	X220	W	X	Y
Komatsu "H" Series SD	0.34 m³	**0.44 yd³**	610 mm	**24"**	441 kg	**972 lb**	4	X220AP	V	V	V
	0.45 m³	**0.59 yd³**	762 mm	**30"**	509 kg	**1,122 lb**	5	X220AP	V	V	V
	0.56 m³	**0.73 yd³**	914 mm	**36"**	581 kg	**1,280 lb**	5	X220AP	V	V	X
	0.67 m³	**0.88 yd³**	1067 mm	**42"**	652 kg	**1,437 lb**	6	X220AP	W	X	Y

V – Used with weights up to 3,500 lb/yd³, W – Used with weights up to 3,000 lb/yd³
X – Used with weights up to 2,500 lb/yd³, Y – Used with weights up to 2,000 lb/yd³, Z – Not useable

STANDARD EQUIPMENT PC120-6/LC-6

- Air cleaner, double element
- Alternator, 25A
- Auto de-airation system for fuel line
- Batteries, 160Ah/2 x 12V
- Boom holding valve
- Cab which includes: antenna; ashtray; cigarette lighter; floor mat; front windshield wiper/washer; heater/defroster 3700 kcal **14,682 Btu**, luggage box; seat, fully adjustable w/suspension, double slide mechanism w/seat belt; window guard (RH)
- Cooling fan, mixed flow with fan guard
- Corrosion resistor
- Counterweight, 2305 kg **5,081 lb**
- Dustproof net for radiator and oil cooler
- Electronic monitor
- Fuel tank sight gauge protection
- Hydraulic Control:
  - Auto-deceleration
  - Auto engine warm-up
  - Engine overheat prevention
  - Power maximizing system
  - Speed down system
  - Working mode selection
- Pump/engine room partition cover
- Rear view mirror (RH & LR)
- Shoes, 600 mm, **20"** (STD) (LC) Triple grouser
- Starting Motor, 5.5 kW
- Swing back prevention valve
- Turbocharger exhaust manifold cover
- Travel alarm
- Working mode selection

OPTIONAL EQUIPMENT PC120-6/LC-6

- Air conditioner with heater
  Cooling, 4300 kcal/h **17,100 Btu**
  Heating, 4000 kcal/h **15,870 Btu**
- Arm
  - 2.1 m **6'11"**
  - 2.1 m **6'11"** with piping
  - 2.5 m **8'2"**
  - 2.5 m **8'2"** with piping
  - 2.5 m **8'2"** heavy-duty
  - 2.5 m **8'2"** heavy-duty with piping
  - 3.0 m **9'10"**
- Arm holding valve
- Boom, one piece
  - 4.6 m **15'1"**
  - 4.6 m, **15'1"** heavy-duty with piping
- Front window guard, full length
- Head guard for cab
- Hydraulic control unit
  - 1 additional actuator
  - 2 additional actuators
  - 3 additional actuators
- Pattern change valve
- Service valve
- Shoes, triple grouser
  - 500 mm **20"** (STD)
  - 700 mm **28"** (STD) (LC)
  - 750 mm **29.5"** (STD) (LC)
- Swing-back reducing valve
- Track guiding guards, center
- Under cover for track frame center

ATTACHMENT OPTIONS

- Buckets
  —Lug bushing
  —Play adjustment mechanism
- Komatsu breakers/hammers
- Komatsu plate compactors
- Lincoln autolube systems
- JRB couplers
- PSM thumbs

For a complete line up of available attachments, please contact your local Komatsu distributor

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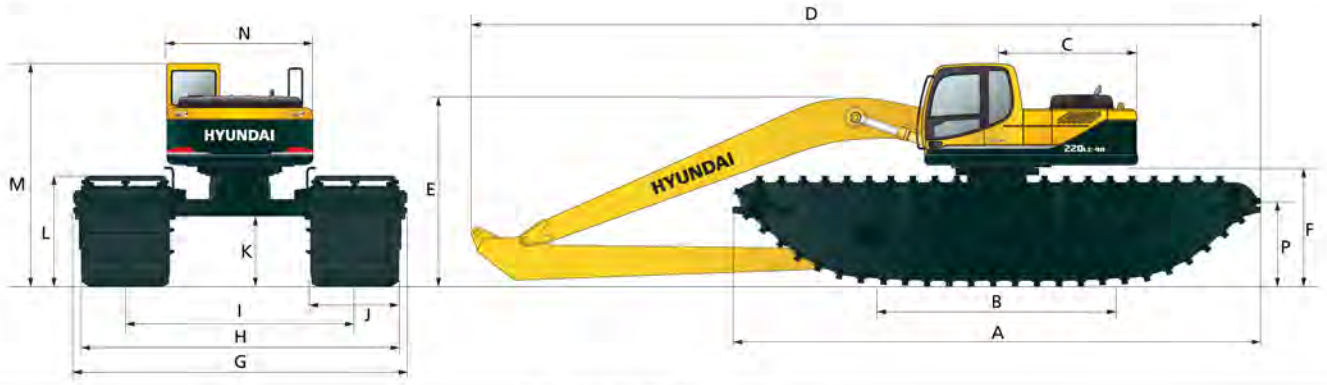
■Dimension

Unit : mm(ft·in)

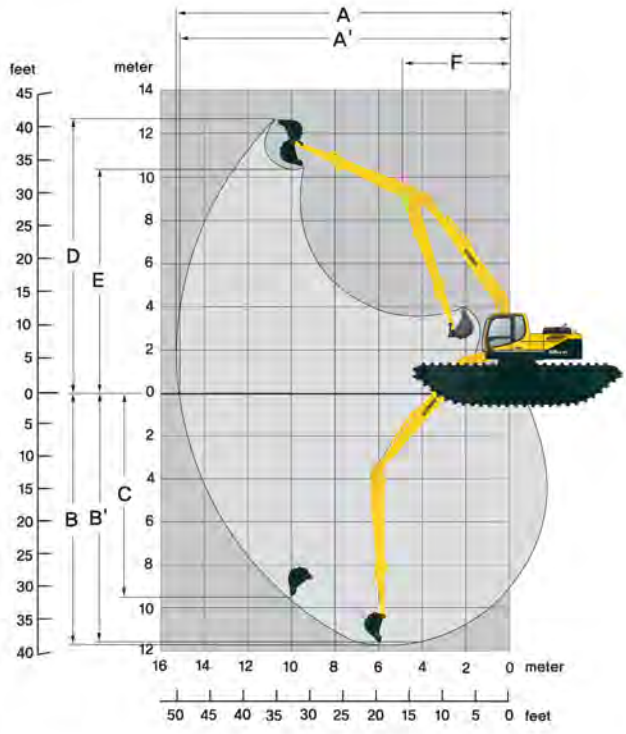


20 ton (44,000 lb) class excavator					
A	Maximum Track Length	9,630 (31' 7")	**I**	Track Gauge (min/max)	2,850/4,330 (9' 4" / 14' 2")
B	Track Length On Ground	4,150 (13' 7")	**J**	Pontoon Width	1,620 (5' 4")
C	Rear Upperstructure Length	2,770 (9' 1")	**K**	Minimum Ground Clearance	1,300 (4' 3")
D	Overall Length	13,870 (45' 6")	**L**	Track Height	2,030 (6' 8")
E	Height Of The Boom	3,730 (12' 3")	**M**	Overall Cab Height	4,020 (13' 2")
F	Upperstucture Clearance	2,170 (7' 0")	**N**	Upperstructure Overall Width	2,740 (8' 12")
G	Overall Width (min/max)	4,800/6,280 (15' 9" / 20' 7")	**P**	Estimated Water Level	1,550 (5' 1")
H	Track Width (min/max)	4,470/5,950 (14' 8" / 19' 6")			

■Working Ranges

Unit : mm(ft·in)

	Boom length	8,200mm (26' 11")
	Arm length	6,300mm (20' 8")
A	Max. digging reach	15,220mm (49' 11")
A'	Max. digging reach on ground	14,940mm (49' 0")
B	Max. digging depth	10,630mm (34' 11")
B'	Max. digging depth (8' level)	10,520mm (34' 6")
C	Max. vertical wall digging depth	8,480mm (27' 10")
D	Max. digging height	13,670mm (44' 10")
E	Max. dumping height	11,410mm (37' 5")
F	Min. swing radius	4,870mm (16' 0")



■Hydraulic Extendable Pontoons :

- Constructed with premium grade steel
- Designed to be able to float on water
- 3 watertight compartments are sealed with individual manholes for easy inspection and maintenance

■Final Drive (2X2)

- A proprietary design using multi- synchronous hydraulic motors on each pontoon
- Multiple active motors propelling each pontoon provides sufficient power, making it virtually undeterred in any terrain

■Sprocket

- The hardworking sprockets, rollers and bushings (embedded within the rollers) are machine finished to high precision and subsequently induction hardened.

■Track Shoe/Cleat

- The track shoes/cleats are steel fabricated and are robotically welded to utmost precision.

■Track Chain

- Each pontoon comes with 3 strands of heavy duty track chains, constructed with high yield strength tensile steel.

PLEASE CONTACT

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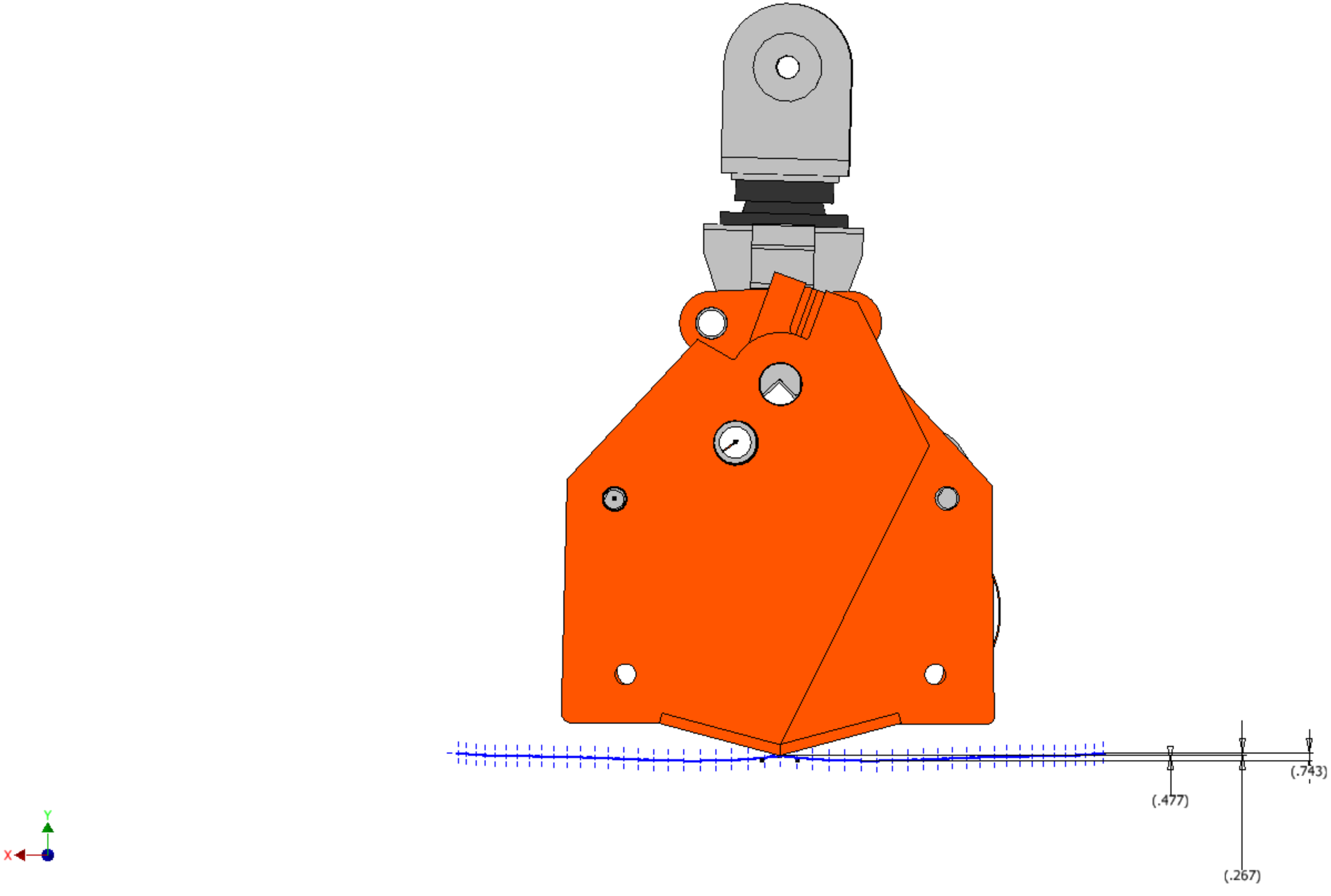
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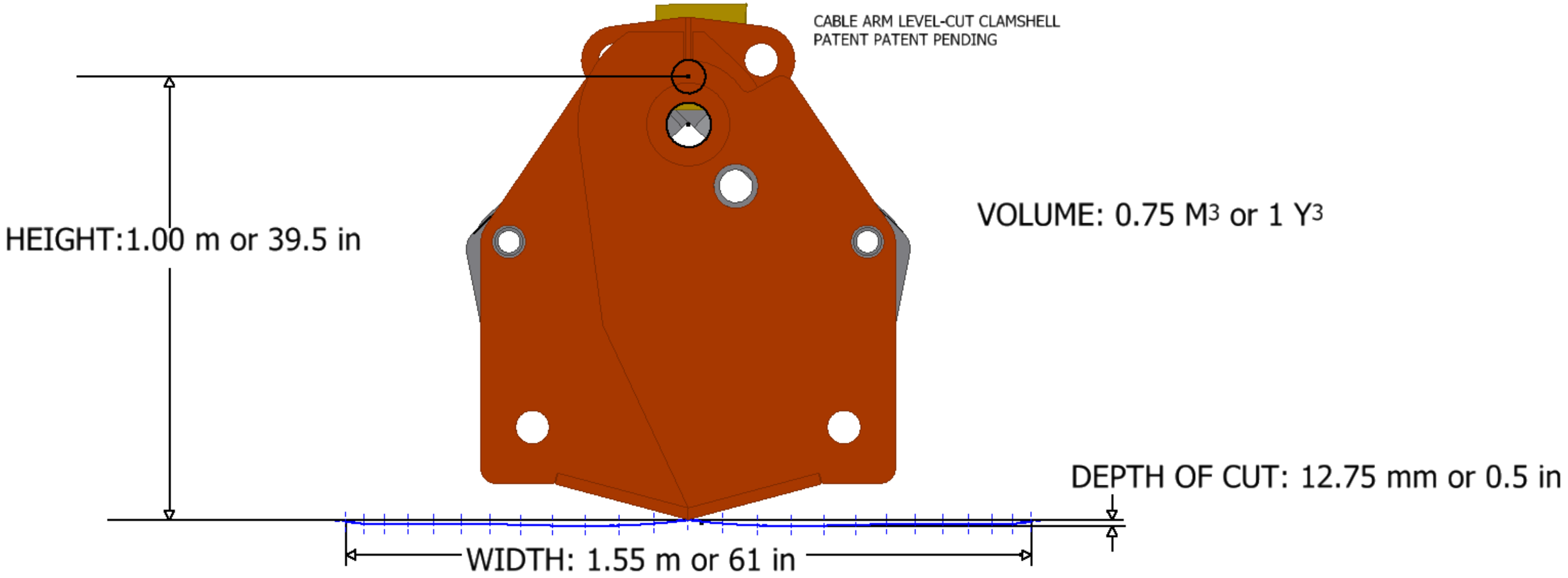
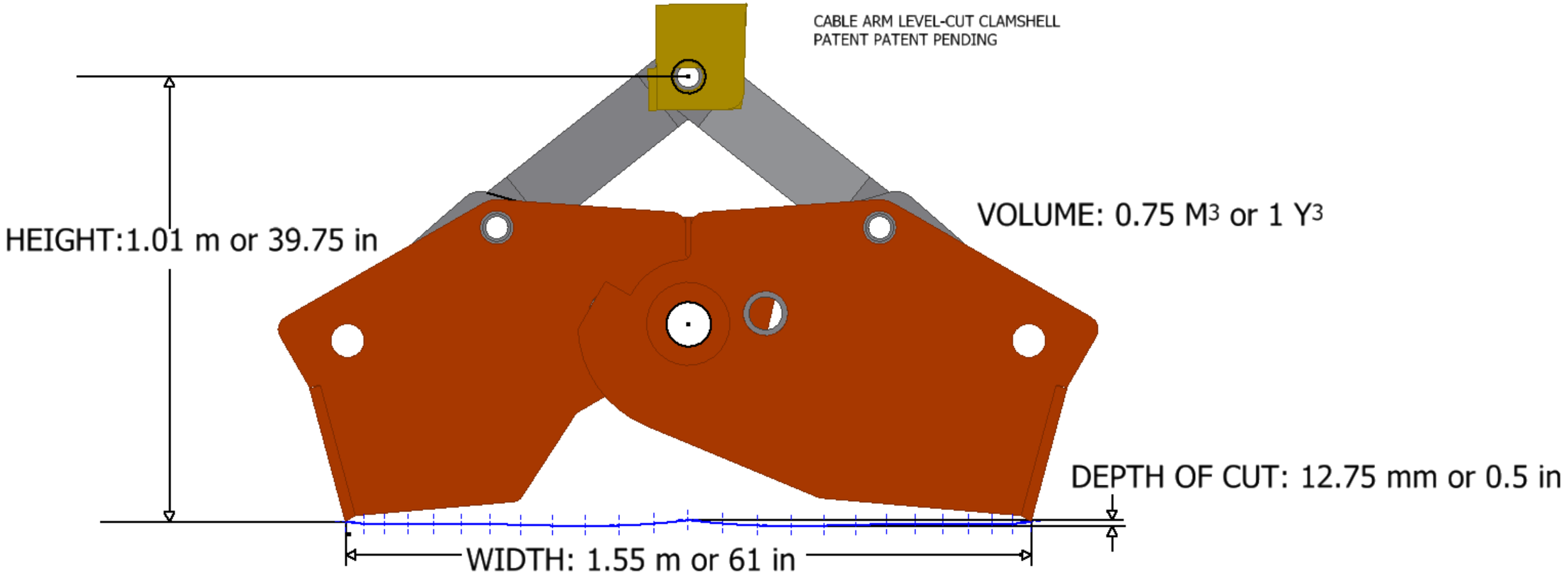

CABLE ARM LEVEL-CUT CLAMSHELL
PATENT PATENT PENDING
HEIGHT:1.00 m or 39.5 in
VOLUME: 0.75 M3 or 1 Y3
DEPTH OF CUT: 12.75 mm or 0.5 in
WIDTH: 1.55 m or 61 in
Y
X


CABLE ARM LEVEL-CUT CLAMSHELL
PATENT PATENT PENDING
HEIGHT:1.01 m or 39.75 in
VOLUME: 0.75 M3 or 1 Y3
DEPTH OF CUT: 12.75 mm or 0.5 in
WIDTH: 1.55 m or 61 in
Y
X

CD100M Dri-Prime® Pump

The Godwin Dri-Prime CD100M pump offers flow rates to 1010 USGPM and has the capability of handling solids up to 1.8" in diameter.

The CD100M is able to automatically prime to 28' of suction lift from dry. Automatic or manual starting/stopping available through integral mounted control panel or optional wireless-remote access.

Indefinite dry-running is no problem due to the unique Godwin liquid bath mechanical seal design. Solids handling, dry-running, and portability make the CD100M the perfect choice for dewatering and bypass applications.

Features and Benefits

- Simple maintenance normally limited to checking fluid levels and filters.
- Dri-Prime (continuously operated Venturi air ejector priming device) requiring no periodic adjustment. Optional compressor clutch available.
- Extensive application flexibility handling sewage, slurries, and liquids with solids up to 1.8" in diameter.
- Dry-running high pressure liquid bath mechanical seal with high abrasion resistant solid silicon carbide faces.
- Close-coupled centrifugal pump with Dri-Prime system coupled to a diesel engine or electric motor.
- All cast iron construction (stainless steel construction option available) with cast steel impeller.
- Also available in a critically silenced unit which reduces noise levels to less than 70 dBA at 30'.
- Standard engine Yanmar 3TNV88 (IT4 Flex). Also available with Caterpillar C1.5T (IT4 Flex).

Specifications

Suction connection	4" 125# ANSI B16.1
Delivery connection	4" 125# ANSI B16.1
Max capacity	1010 USGPM †
Max solids handling	1.8"
Max impeller diameter	9.1"
Max operating temp	176°F*
Max pressure	55 psi
Max suction pressure	41 psi
Max casing pressure	83 psi
Max operating speed	2200 rpm

* Please contact our office for applications in excess of 176°F.

† Larger diameter pipes may be required for maximum flows.

Please contact the factory or office for further details. A typical picture of the pump is shown. All information is approximate and for general guidance only.

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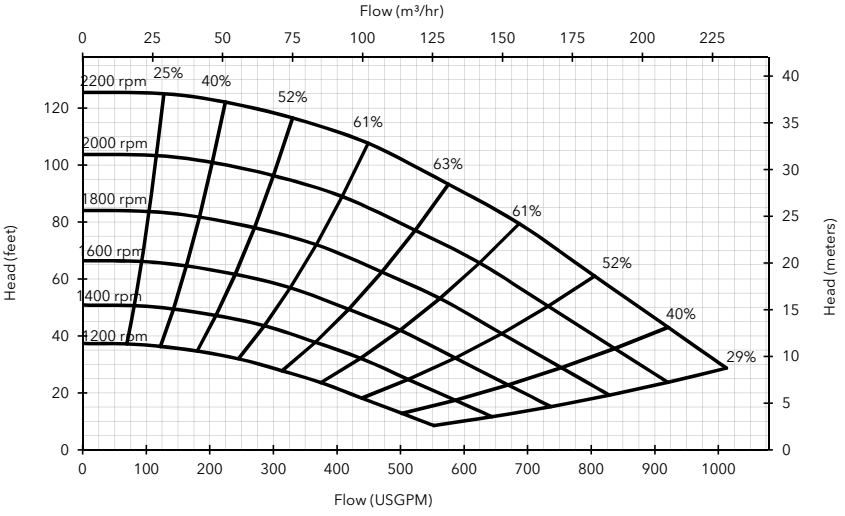
Performance Curve



Materials

Pump casing & suction cover	Cast iron BS EN 1561 - 1997
Wearplates	Cast iron BS EN 1561 - 1997
Pump Shaft	Carbon steel BS 970 - 1991 817M40T
Impeller	Cast Steel BS3100 A5 Hardness to 200 HB Brinell
Non-return valve body	Cast iron BS EN 1561 - 1997
Mechanical seal	Silicon carbide face; Viton elastomers; Stainless steel body

Engine option 1

Yanmar 3TNV88 (IT4 Flex), 30 HP @ 2200 rpm

Impeller diameter 9.1"

Pump speed 2200 rpm

Suction Lift Table

Total Suction Head (feet)	Total Delivery Head (feet)				
	17	44	57	73	87
	Output (USGPM)				
10	956	872	788	675	546
15	900	816	731	619	450
20	703	664	619	534	394
25	450	422	394	338	225

Fuel capacity: 30 US Gal

Max Fuel consumption @ 2200 rpm: 1.6 US Gal/hr

Max Fuel consumption @ 1800 rpm: 1.4 US Gal/hr

Weight (Dry): 1,800 lbs

Weight (Wet): 2,020 lbs

Dim.: (L) 102" x (W) 54" x (H) 70"

Performance data provided in tables is based on water tests at sea level and 20°C ambient. All information is approximate and for general guidance only. Please contact the factory or office for further details.

Engine option 2

Caterpillar C1.5T (IT4 Flex), 34 HP @ 2200 rpm

Impeller diameter 9.1"

Pump speed 2200 rpm

Suction Lift Table

Total Suction Head (feet)	Total Delivery Head (feet)				
	17	44	57	73	87
	Output (USGPM)				
10	956	872	788	675	546
15	900	816	731	619	450
20	703	664	619	534	394
25	450	422	394	338	225

Fuel capacity: 30 US Gal

Max Fuel consumption @ 2200 rpm: 2.1 US Gal/hr

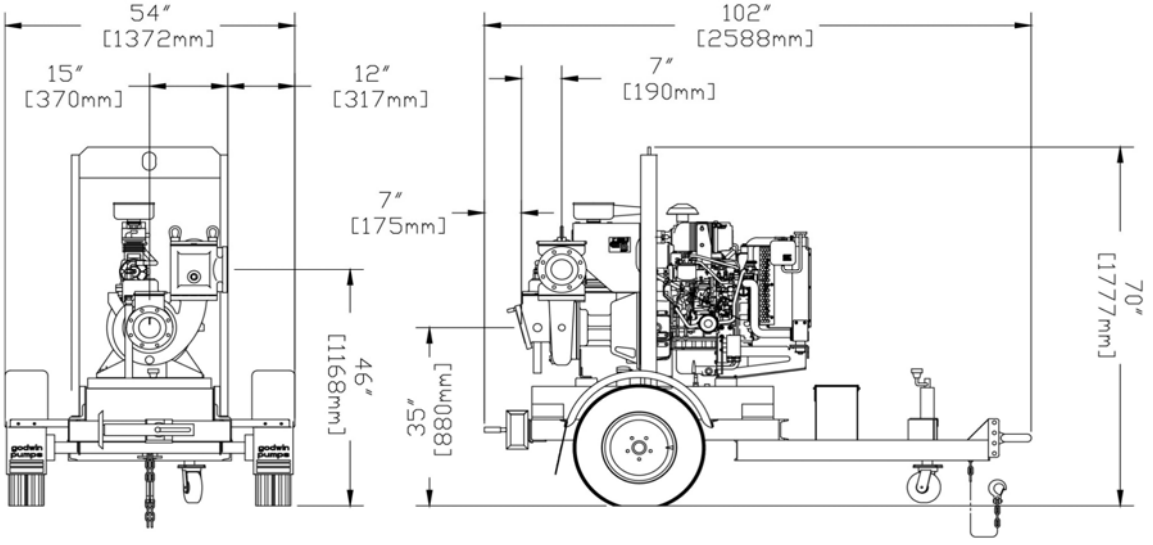
Max Fuel consumption @ 1800 rpm: 1.8 US Gal/hr

Weight (Dry): 1,750 lbs

Weight (Wet): 1,960 lbs

Dim.: (L) 102" x (W) 54" x (H) 70"

Performance data provided in tables is based on water tests at sea level and 20°C ambient. All information is approximate and for general guidance only. Please contact the factory or office for further details.



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Date of issue : February 26, 2014
Issue : 5

www.godwinpumps.com

GSP05/10/20 Sub-Prime® Electric Submersible Pumps

The GSP Sub-Prime line is a selection of portable, electric submersible dewatering pumps available for a wide range of pumping applications on construction, industrial, mining, utility, and municipal job sites. Available in 0.5 hp / 0.4 kW (GSP05), 1 hp / 0.75 kW (GSP10), and 2 hp / 1.5 kW (GSP20) models, the GSP Sub-Prime offers flow rates from 70 to 110 gpm (4.4 to 6.9 l/sec) and maximum heads from 39 to 70 feet (11.9 to 21.3 meters). Compact design allows these versatile units to go where other pumps simply do not fit. An optional piggy back single float switch can be supplied as a cost effective choice for applications requiring automatic operation.

Features and Benefits

- UL and CSA listed and approved *
- Dry-running capability without damage
- No control panel required for starting. (Control panel is needed for motor protection.)
- Portable, lightweight, durable
- Slim line top discharge design, only 7.2 in. (183mm) diameter for GSP05 and GSP10 models, 9.25 in. (235mm) diameter for the GSP20 model.
- Non-wicking cable with strain relief
- High-torque, capacitor-start motor
- Motor thermal overload protection
- Outer jacket for continuous cooling of motor
- Silicon Carbide upper and lower mechanical seals
- Triple sealed – internal upper and lower mechanical seals and external lip seal
- Torque flow impeller

Specification

	GSP05	GSP10	GSP20
HP (kW)	0.5 (0.4)	1.0 (.75)	2.0 (1.5)
Max. Flow - gpm (l/sec)	70 (4.4)	90 (5.7)	110 (6.9)
Max. Head - ft (m)	39 (11.9)	60 (18.3)	70 (21.3)
Max. Solids - in. (mm)	1/3 (9)	1/3 (9)	1/3 (9)
Cable Length - ft (m)	30 (9)	50 (15)	50 (15)
Discharge - in. (mm)	2 (50)	2 (50)	3 (75)
RPM	3600	3600	3600
Max. Fluid Temp.	90° F (32° C)	90° F (32° C)	104° F (40° C)
PH Range	6.5-8.0	6.5-8.0	6.5-8.0
Voltage	115, 230	115, 230	115/230
Amps	5.8, 3.2	10.3, 5.11	25.9/13.0
Phase	Single	Single	Single
Height - in. (mm)	12.8 (325)	14.1 (358)	24.5 (622)
Width - in. (mm)	7.2 (183)	7.2 (183)	9.25 (235)
Weight - lbs. (kg)	20 (9)	29 lbs. (13)	61 (28)
Max. Sub. - ft (m)	16.5 (5)	16.5 (5)	16.5 (5)

C SA® US

* n.a. for GSP20

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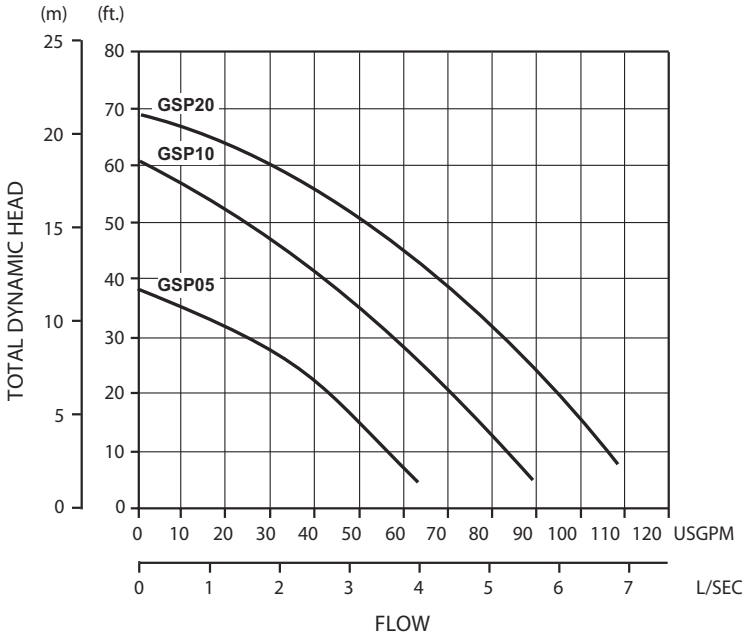
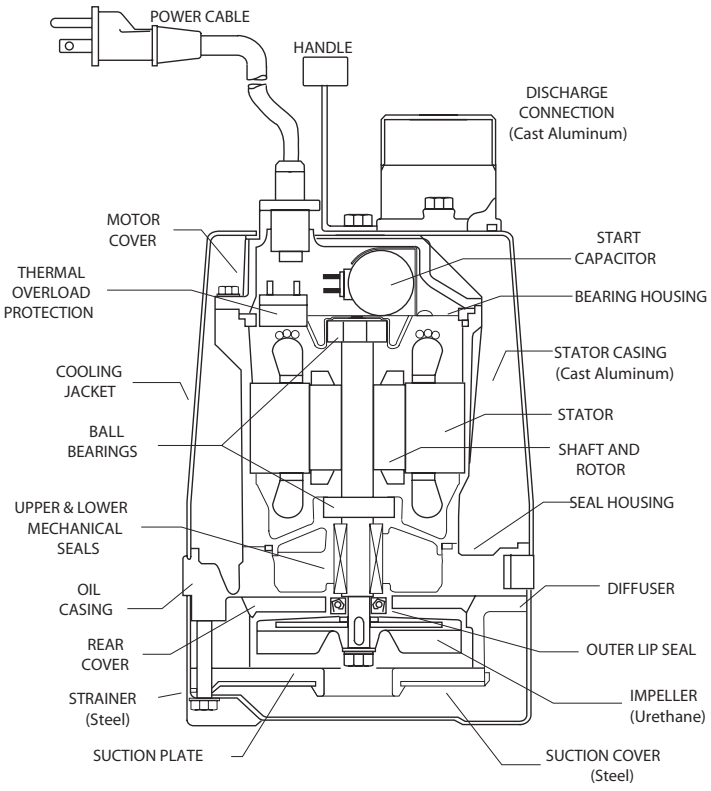
GSP Sub-Prime® Performance Curves



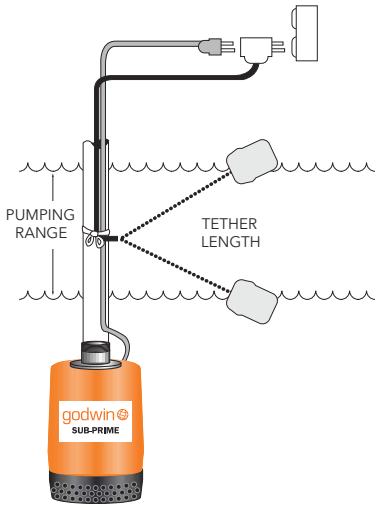
WARNING: Pumps are not designed for use in explosive atmosphere, flammable environments or for pumping volatile liquids.

Design & Construction



Float Switch

Optional Float Switches available for automatic, remote activation of Sub-Prime pumps. Package consists of 30 ft/50ft (9m/15m) power cord with piggy-back power plug, variable length float tether, and sealed float. Typical configuration shown below.

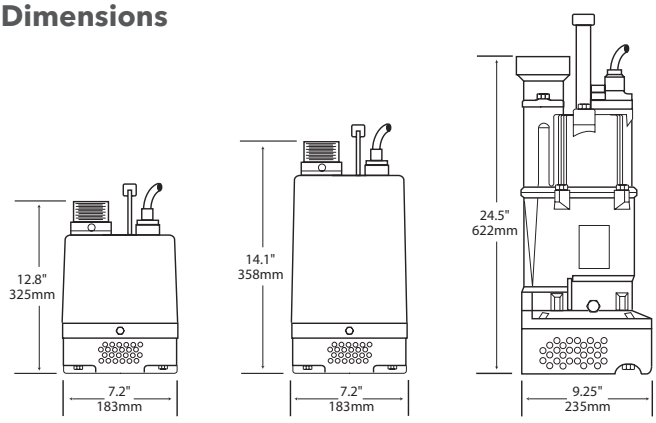


Pumping range determined by tether length according to the following guide.

Tether	3.5	5	7	9	11	13	15	in.
Length	89	127	178	229	279	330	381	mm.
Pumping	6.5	7.5	8.5	10	11	12.5	13.5	in.
Range	165	1914	216	254	279	318	343	mm.

Pumping range based on operation in non-turbulent conditions. Actual range may vary due to temperature conditions and cord shape. Tether length increases variance of pumping range.

Dimensions



GSP05 **GSP10** **GSP20**

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Let's Solve Water

Dewatering Solutions
84 Floodgate Road, Bridgeport, NJ 08014
Tel +1.856.467.3636

GODWIN_GSP_05/10/20_07.11.14
www.godwinpumps.com

Heidra 100TD Pump

The Godwin Heidra 100TD hydraulic submersible pump is a compact self-contained pumping unit featuring a diesel driven power pack and hydraulic pump end. With variable speed diesel engine power, the Heidra 100TD can meet a variety of flow and head requirements up to 176 m³/hr and total dynamic head requirements up to 22 metres.

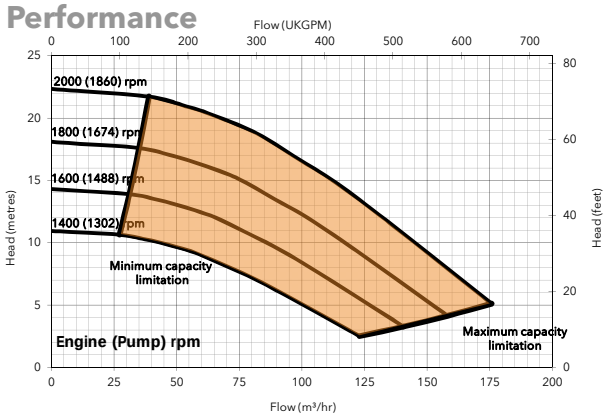
It has the ability to handle solids up to 45 mm in diameter. It also has dry running capabilities, a cast steel impeller, providing a rugged dewatering / solids handling, hydraulic submersible pump ready to go anywhere.

TLPN: HS100TD-01-001

Features

- Optional 100 mm bauer discharge connection. The quick release lever allows pipe work to be connected & disconnected very easily.
- Double mechanical seal in its own clean oil bath allows for indefinite dry running. Inboard seal: silicon carbide. Outboard seal: carbon or ceramic.
- Gear motor connections are standard SAE flange & shaft. Which allows easy connection to plug directly into bearing bracket.
- This special design allows the pump to fit down a standard 22 inch Manhole.
- Open solid handling impellers with replaceable wearplates.
- Safe pump end no risk of electric shock or explosion.
- Alternative powerpack options available e.g. Highway trailer, Site trolley. Electric motor drive option also available.
- Godwin Power Pack GHPU10 as standard.

Performance



Specifications

Suction connection	100 mm with strainer
Delivery connection	4" BSP (F)
Max capacity	176 m³/hr
Max Head	22 metres
Max operating speed	2000 rpm
Max Impeller diameter	230 mm
Max operating temperature	60 °C *
Max pressure	2.2 bar
Max suction pressure	2.5 bar
Max casing pressure	3.3 bar
Max Solids handling	45 mm

* Please contact our office for applications in excess of maximum temperature.

Materials

Pump casing & suction cover	Cast iron CI BS EN1561/EN-JL1030 (220)
Wearplates	Cast iron CI BS EN1561/EN-JL1030 (220)
Pump Shaft	Carbon Steel 080M40
Impeller	Cast Steel EN10293/A5
Mechanical Seal Face	Silicon Carbide vs Silicon Carbide
Suction Strainer & Lifting Bracket	Fabrication Mild Steel tube and plate.

Pump end - dimensions

Length	490 mm
Width	420 mm
Height	600 mm
Dry Weight	75 kg

Hydraulic Drive data

Hydraulic Drive pressure	250 bar
Pump speed	2000 rpm
Hydraulic motor	Gear type
Hydraulic motor displacement	15 cc/rev
Hydraulic Flow	50 l/min

Reference number : 95-1207-1000
Date of issue : 20 February 2014
Issue : 6

Please contact the factory or office for further details.
A typical picture of the pump is shown.
All information is approximate and for general guidance only.

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Godwin Hydraulic Power Pack

Power Pack - GHPU10

403D-15

General data

Engine: Perkins 403D-15 (17 kW @ 2000 rpm)	
Engine speed	2000 rpm
Hydraulic Pump	Gear type
Hydraulic pump displacement	23 cc/rev
Output flow	50 l/min
Hydraulic reservoir capacity	80 litres

Maximum hose lengths

Engine (rpm)	1400	1600	1800	2000
Max Length (mtrs)	60	50	40	30

Hydraulic Hose

Feed/Return	19 mm (¾") BSP Quick Disconnect & 19 mm (¾") NB pipe.
Bleed Line	10 mm (⅜") BSP Quick Disconnect & 16 mm (½") NB pipe.

Open set configuration

TLPN: GHPU10-DBO-002

Hush-Pac configuration

TLPN: GHPU10-DBH-002

Dimensions

Length	1800 mm
Width	1000 mm
Height	1900 mm
Wet weight	1,275 kg
Fuel tank capacity (Full)	170 litres

Dimensions

Length	2190 mm
Width	1045 mm
Height	1500 mm
Wet weight	1,400 kg
Fuel tank capacity (Full)	180 litres

Acoustic information

Engine	Speed (rpm)	Average Sound Pressure rating (dbA)		
		1 m	3 m	7 m
Hushpac	1200	71	66	63
	1800	73	69	64
	2000	76	70	65

Xylem Dewatering Solutions UK Ltd
Quenington, Cirencester
Gloucestershire GL7 5BX, England
Tel: +44 (0)1285 750271 Fax: +44 (0)1285 750352

Reference number : 95-1207-1000-GHPU10
Date of issue : 20 February 2014
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www.godwinpumps.com

xylem Let's Solve Water

Assessed to ISO 9001:2008

godwin a xylem brand

P.O. Box 640
1800 Springhead Ch. Rd.
Willacoochee, Ga. 31650

912-534-6071
800-948-7870
912-534-6254(fax)

Subject: **L & M Filter Bags/Dewatering Bags**

This letter certifies **L & M Filter Bags/Dewatering Bags**, manufactured by L&M Supply Co., are made with 8oz Non Woven Geotextile Fabric. **L & M Filter Bags/Dewatering Bags** are inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids. The stitching is a Durable, Double Thread Chain Stitch. **Standard Sizes:** 5' X 6', 10' X 15' and 15' X 15'. Custom Sizes are available. The average laboratory test values are as follows:

PROPERTY	TEST METHOD	UNIT	ROLL VALUE MARV
Tensile Strength	ASTM D 4632	Lbs	205
Elongation	ASTM D 4632	%	50
Mullen Burst	ASTM D 3786	PSI	380
Trapezoidal Tear	ASTM D 4533	Lbs	85
CBR Puncture Strength	ASTM D 4833	Lbs	535
AOS	ASTM D 4751	Sieve	80
Permittivity	ASTM D 4491	Sec-1	1.35
Water Flow Rate	ASTM D 4491	Gpm/ft	90
UV Resistance	ASTM D 4355	%	70/500
Approx. Port Diameter		Inches	16

Unless otherwise noted, this certification is based on testing conducted by our Quality Assurance & Quality Control testing laboratories at the time of manufacturing. L & M Supply Co., Inc. issued this letter of certification to indicate our commitment to providing our customers with a quality product which will meet or exceed the minimum average roll values in accordance with the applicable American Society for Testing and Materials (ASTM) test method.

Respectfully,

Quentin McMillan

ECS
EAST COAST SURVEYING, LLC
P. O. Box 4557, 5 Powder Horn Drive, Suite #4 Phone: 732-564-1717
Warren, New Jersey 07059 Fax: 732-564-1409

Instrumentation – Utilization, Calibration & Maintenance

East Coast Surveying, LLC has made a concerted effort and a large capital commitment to obtain state-of-the-art equipment. This equipment allows us to provide extremely accurate data to our client and engineers for their use in design and informational purposes. Our robotic total stations are inspected and serviced at least twice a year or as needed and run through a calibration baseline annually. GPS equipment is constantly monitored and calibrated through redundant observations of NGS stations to insure accuracy and reliability.

Current survey equipment assets include:

ROBOTIC TOTAL STATIONS:

Trimble S7 Robotic Total Stations Series (Total units 8)
Distance measurement Accuracy
Standard measurement ± (1mm + 2ppm) ± (0.003 ft + 2 ppm)
Tracking measurement ± (4mm + 2ppm) ± (0.013 ft + 2 ppm)
Direct Reflex mode (Reflectorless)
Standard measurement ± (2 mm + 2 ppm) ± (0.007 ft + 2 ppm)
Angle reading
Horizontal & vertical
Standard measurement 1”

Trimble 5600 DR Robotic Total Stations Series (Total units 2)
Distance measurement Accuracy
Standard measurement ± (2mm + 2ppm) ± (0.007 ft + 2 ppm)
Direct Reflex mode (Reflectorless)
Standard measurement ± (3 mm + 2 ppm) ± (0.01 ft + 2 ppm)
Angle reading
Horizontal & vertical
Standard measurement 1”

Focus 10 Robotic Total Station (Total units 2)
Distance measurement Accuracy
Standard measurement ± (3mm + 3ppm) ± (0.01 ft + 3 ppm)
Direct Reflex mode (Reflectorless)
Standard measurement ± (3mm + 3ppm) ± (0.01 ft + 3 ppm)
Angle reading
Horizontal & vertical
Standard measurement 1”

Topcon 802A (Total units 1)
Distance measurement Accuracy
Standard measurement 1mm (0.0005ft.)
Angle reading
Horizontal & vertical
Standard measurement 1”
STANDARD TOTAL STATION:
Sokkia (Total units 2)
Accuracy Fine measurement with prism ± (2 mm+ 2 ppm)

GPS RECEIVERS:

EPOCH 60/50 GNSS System (Total units 9)
Accuracy

Static GNSS surveying
Horizontal ±5 mm + 0.5 ppm RMS
Vertical ±5 mm + 1 ppm RMS

Real-Time surveying
Horizontal ±10 mm + 1 ppm RMS
Vertical ±20 mm + 1 ppm RMS

LEVELS:

Topcon Auto Level AT-G2 with precise optical micrometer (Total units 4)
Accuracy Direct read to a 1,000th of a foot estimated to 10,000th of a foot

Sokkia Auto Level (Total units 3)
Accuracy Direct read to a 100th of a foot estimated to 1,000th of a foot

Laser Scanners

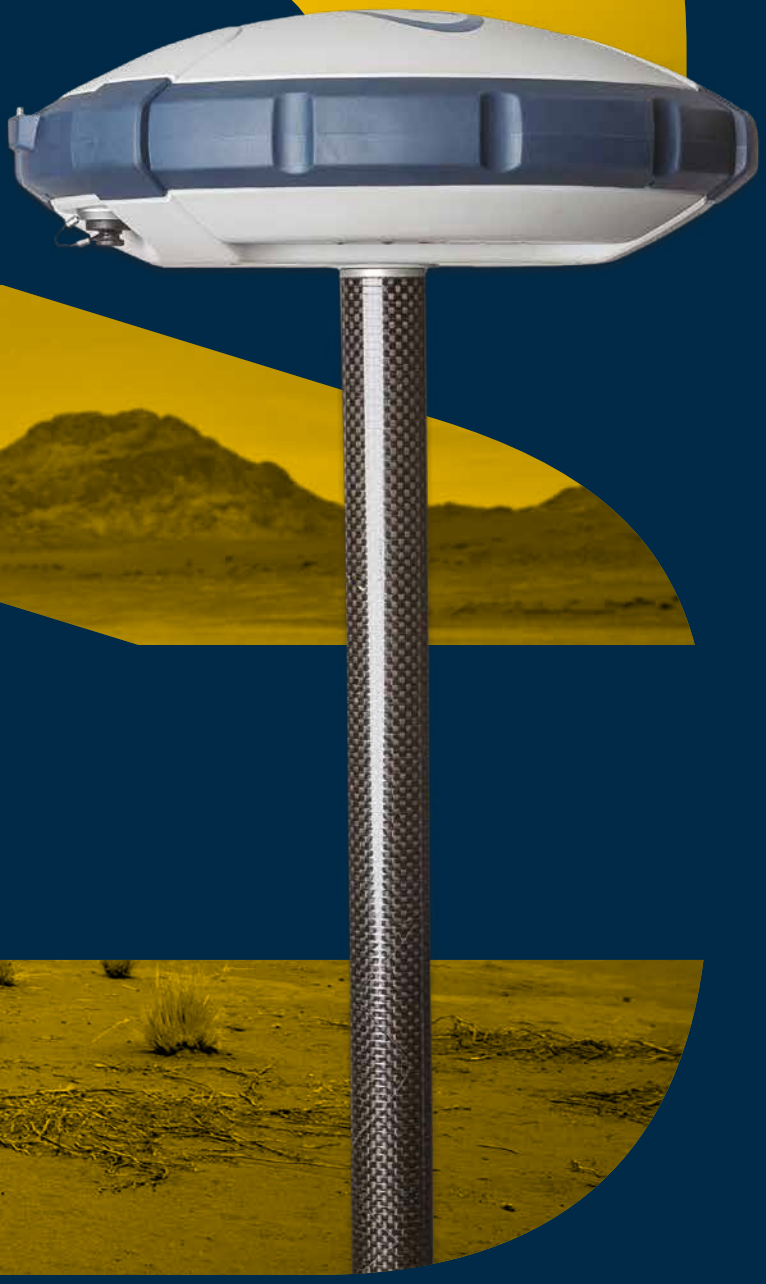
Leica Scanstation P30 Ultra High Speed Scanner - The P30 is the latest terrestrial LiDAR system from Leica Geosystems. Utilizing Wave Form Digitization, the P30 can achieve scan speeds comparable to phase shift based scanners (>1,000,000 pnts/sec) while maintaining the low noise & high accuracy of a time-of-flight scanner. The P30 also boasts the highest angular accuracy currently available on the market, 8 arc seconds both horizontal and vertical.

Leica Scanstation C10 - The C10 is a proven instrument capable of speeds up to 50,000 points/second and accurate to within 6mm. The C10 also has an effective range of over 600ft

Miscellaneous
16’ aluminum boat with 9hp and 25hp motors (2)
800hp Argo All-Terrain Amphibious Vehicle with winch, boat motor mount and roll cage.

SPECTRA®
GEOSPATIAL

SP60®



www.spectrageospatial.com

SIMPLY VERSATILE

SP60
GNSS RECEIVER

The Spectra Geospatial SP60 is a new generation GNSS receiver offering a high level of flexibility to cover any demand from GIS all the way up to sophisticated RTK and Trimble RTX™ capable solutions.

Combining the unique all-signals-tracking and processing Z-Blade GNSS-centric technology and L-band capability for satellite-delivered Trimble RTX correction services, the SP60 receiver provides the most reliable measurements and the highest possible accuracy under any conditions anywhere in the world.

KEY FEATURES:

- Extended scalability
- Z-Blade GNSS-centric technology
- 240-channel 6G ASIC
- Anti-theft technology
- Long Range Bluetooth
- Trimble RTX correction services

Patented inside-the-rod mounted UHF antenna design

TRULY SCALABLE AND VERSATILE

Extremely scalable and versatile, SP60 can respond to any type of GIS or surveying job starting with two GIS configurations, to a simple L1 GPS only post-processing solution, all the way up to dual-frequency GNSS network RTK rover. Also, the L-band capable GNSS antenna delivers Trimble RTX positioning in those places where an RTK network is not available. Finally, optional UHF transmit radio or embedded Long Range Bluetooth enable SP60 receivers to be used as a base and rover system. This extended flexibility allows surveyors to start with a simple solution, and through hardware and firmware upgrades, adapt the SP60 to more complex survey jobs.

UNIQUE 6G GNSS-CENTRIC TECHNOLOGY

Exclusive Z-Blade processing technology running on a next-generation Spectra Geospatial 240-channel 6G ASIC fully utilizes all 6 GNSS systems: GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS. The unique GNSS-centric capability optimally combines GNSS signals without dependency on any specific GNSS system; this allows SP60 to operate in GPS-only, GLONASS-only or BeiDou-only mode if needed. Thanks to this unique GNSS technology, SP60 is optimized for tracking and processing signals even in very challenging environments.

OPEN TO 3RD PARTY CONTROLLERS AND APPLICATIONS

With SP60, consumer devices are no longer limited by their internal GPS and can reach mapping grade or even survey-grade accuracy levels. This solution is also open to any application needing to get an accurate position. The SPace application makes integration immediate and straightforward. With SP60 it is now possible to have accurate positions on an Android consumer smart phone or tablet.

TRIMBLE RTX CAPABLE

Trimble RTX correction services offer a wide range of accuracy requirements ranging from better than 4 cm accuracies, up to sub-meter accuracies, without the need of an RTK base station or cellular coverage. Trimble RTX is available via both satellite and cellular/IP delivery. The premium service, CenterPoint® RTX is the most accurate satellite-delivered correction service available today. The SP60, empowered with an L-band GNSS antenna, supports the entire suite of Trimble RTX correction services via satellite delivery and is ideal for operating in areas where there is no network available and a local base and rover set-up is not possible. With the SP60 GNSS receiver and a Trimble RTX correction, achieve high-accuracy positioning nearly anywhere in the world.

BUILT-IN LONG RANGE BLUETOOTH

SP60 integrates powerful Long Range Bluetooth capabilities opening new operating modes for surveyors. Now, the Bluetooth wireless communication can be used as an alternative radio link between base and rover over a few hundred meters range making this solution very attractive for small site surveys. Easier and simpler than UHF radio, and without any need for a license, this can be a very efficient way to quickly setup a short range base rover solution.

ANTI-THEFT TECHNOLOGY

Unique anti-theft technology secures SP60 when installed as a field base station in remote or public places and can detect if the product is disturbed, moved or stolen. This technology allows the surveyor to lock the device to a specific location and make it unusable if the device is moved elsewhere. In this case, SP60 will generate an audio alert and block the device from further use. SP60's anti-theft technology provides surveyors with remote security and peace of mind.

ADVANCED DESIGN

In addition to the cutting-edge L-band capable GNSS antenna, and unique Long Range Bluetooth module, the SP60 GNSS receiver design incorporates a number of innovative ideas and enhancements. It features a rugged, impact-resistant housing, easily withstanding 2m pole drops. Waterproof to IP67 standard, it can handle the toughest outdoor conditions. The patented UHF antenna, set inside the fiberglass rod, extends the range of RTK radio performance and provides protection at the same time. All of these enhancements make the design of SP60 GNSS receiver truly unique and powerful.

THE SPECTRA GEOSPATIAL EXPERIENCE

Survey Pro or FAST Survey field software provides easy-to-use, yet powerful GNSS workflows, letting the surveyor concentrate on getting the job done. The Survey Office Software provides a complete office suite for data processing and Central cloud computing solution offers a simple to use pathway to data exchange and management. When combined with the most advanced and rugged field data collectors from Spectra Geospatial, SP60 is a very powerful and complete solution.

SPECTRA GEOSPATIAL

SP60

GNSS CHARACTERISTICS
- 240 GNSS channels
  - GPS L1C/A, L1P(Y), L2P(Y), L2C, L1C
  - GLONASS L1C/A, L2C/A, L1P, L2P
  - QZSS L1C/A, L2C, L1Z, L1C
  - BeiDou B1, B2, B1C
  - Galileo E1, E5b
  - SBAS L1C/A
  - L-band MSS
- Support for Trimble RTX™ real-time correction services
- Patented Z-Blade technology for optimal GNSS performance
  - Full utilization of signals from all 6 GNSS systems (GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS)
  - Enhanced GNSS-centric algorithm: fully-independent GNSS signal tracking and optimal data processing, including GPS-only, GLONASS-only or BeiDou-only solution (autonomous to full RTK)
  - Fast Search engine for quick acquisition and re-acquisition of GNSS signals
- Patented SBAS ranging for using SBAS code & carrier observations and orbits in RTK processing
- Patented Strobe™ Correlator for reduced GNSS multi-path
- Up to 10 Hz real-time raw data (code & carrier and position output)
- Supported data formats: ATOM, CMR, CMR+, RTCM 2.1, 2.3, 3.0, 3.1 and 3.2 (including MSM), CMRx and sCMRx (rover only)
- NMEA 0183 messages output

REAL-TIME ACCURACY (RMS) [1][2]

SBAS (WAAS/EGNOS/MSAS/GAGAN)
- Horizontal: < 50 cm
- Vertical: < 85 cm

Real-Time DGPS position
- Horizontal: 25 cm + 1 ppm
- Vertical: 50 cm + 1 ppm

Real-Time Kinematic position (RTK)
- Horizontal: 8 mm + 1 ppm
- Vertical: 15 mm + 1 ppm

GIS accuracy modes
- 30/30
  - Horizontal: 30 cm
  - Vertical: 30 cm
- 7/2 (firmware option needed)
  - Horizontal: 7 cm
  - Vertical: 2 cm

REAL-TIME PERFORMANCE
- Instant-RTK® Initialization
  - Typically 2 sec for baselines < 20 km
  - Up to 99.9% reliability
- RTK initialization range: over 40 km

POST-PROCESSING ACCURACY (RMS) [1][2]

Static & Fast static
- Horizontal: 3 mm + 0.5 ppm
- Vertical: 5 mm + 0.5 ppm

High-Precision Static [3]
- Horizontal: 3 mm + 0.1 ppm
- Vertical: 3.5 mm + 0.4 ppm

Post-Processed Kinematic (PPK)
- Horizontal: 8 mm + 1 ppm
- Vertical: 15 mm + 1 ppm

DATA LOGGING CHARACTERISTICS

Recording interval
- 0.1 - 999 seconds

PHYSICAL CHARACTERISTICS

Size
- 21 x 21 x 7 cm (8.3 x 8.3 x 2.3 in)

Weight
- 930 g (2.08 lb)

User interface
- Five LEDs for Power, Tracking, Bluetooth, Recording, Radio operations

I/O interface
- RS232 serial link
- USB 2.0/UART and USB OTG
- Bluetooth 2.1 + EDR. Long range: Class 1 (17dbm)

Memory
- 256 MB internal memory NAND Flash
- Over a month of 15 sec. raw GNSS data from 14 satellites

Operation
- RTK rover & base
- RTK network rover: VRS, FKP, MAC
- NTRIP, Direct IP
- Post-processing
- Trimble RTX (satellite and cellular/IP)

Environmental characteristics
- Operating temperature: -40° to +65°C / (-40° to +149°F) [4]
- Storage temperature: -40° to +85°C / (-40° to +185°F) [5]
- Humidity: 100% condensing
- IP67 waterproof, sealed against sand and dust
- Drop: 2m pole drop on concrete
- Shocks: MIL STD 810 (fig 516.5-10) (01/2000)
- Vibration : MIL-STD-810F (fig 514.5C-17) (01/2000)

Power characteristics
- Li-Ion battery, 7.4 V, 2600 mAh
- Battery life:
  10 hrs (GNSS On, UHF Rx Off)
  8 hrs (GNSS On, UHF Rx On)
- External DC power: 9-28 V

Standard system components
- SP60 receiver
- Li-Ion battery
- Dual battery charger, power supply and international power cord kit
- Tape measure (3.6 m / 12 ft)
- 7 cm pole extension
- USB to mini-USB cable
- 2 year warranty

Optional system components
- SP60 UHF Kit (410-470 MHz 2W TRx)
- SP60 Field Power Kit
- SP60 Office Power Kit
- Data collectors
  - Ranger 3
  - T41
  - MobileMapper 50
- Field software
  - Survey Mobile (Android)
  - SPace control app for 3rd party devices (Android)
  - Survey Pro
  - FAST Survey

1 Accuracy and TTFF specifications may be affected by atmospheric conditions, signal multipath, satellite geometry and corrections availability and quality.

2 Performance values assume minimum of five satellites, following the procedures recommended in the product manual. High multipath areas, high PDOP values and periods of severe atmospheric conditions may degrade performance.

3 Long baselines, long occupations, precise ephemeris used

4 At very high temperatures UHF module should not be used in the transmitter mode. With UHF transmitter on radiating 2W of RF power, the operating temperature is limited to + 55°C (+131°F).

5 Without batteries. Batteries can be stored up to +70°C.

6 Receiver initialization time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings.

TRIMBLE RTX INITIALIZATION [1][2][6]

	Horizontal (RMS)	Initialization	GNSS
CENTERPOINT® RTX	<2 cm	<15 mins, <1 min	L1 + L2
FIELDPOINT RTX™	10 cm	<15 mins, <1 min	L1 + L2
RANGEPOINT® RTX	30 cm	< 5 mins	L1 + L2
VIEWPOINT RTX™	< 50 cm	< 5 mins	L1

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Please visit www.spectrageospatial.com for the latest product information and to locate your nearest distributor. Specifications and descriptions are subject to change without notice.

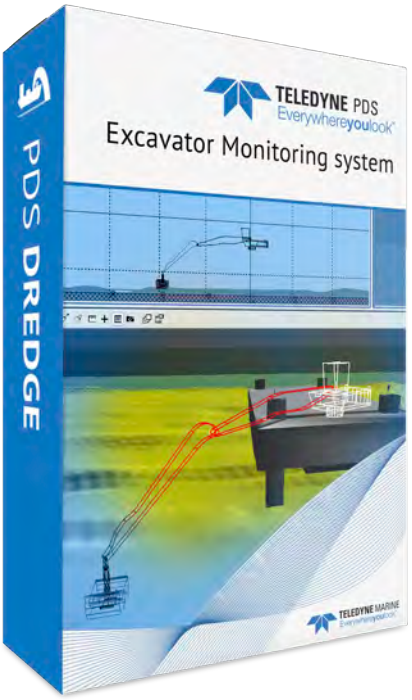
Teledyne PDS

Excavator Monitoring system

With over 25 years dredge market experience, Teledyne RESON produces precision tools for any user. This leaflet gives you a brief overview of our capabilities.

Our client database includes large and small dredging companies, hydraulic engineering, construction, offshore and survey firms. With those in mind, all Teledyne RESON products are designed to withstand the harsh environment in which the equipment is used.

Whether it's for revetment surveys, rock dumping, excavating, dredging, maintenance surveys, building breakwaters, windmill parks, barge management or any other construction projects, Teledyne RESON will supply you with a suitable solution.



Teledyne RESON's Teledyne PDS excavator application is tailored to the requirements of the dredge operator to carry out his job more efficiently. The operator has real time an overview of the excavator and pontoon in top and profile views displaying the excavator outline, the boom, stick and bucket along with the surveyed depth and design depth. The position of the dredge-tool relative to the design is constantly monitored and displayed. A color-coded Digital Terrain Model (DTM) highlights the high and low spots. The DTM is updated real-time for the shape of the bucket or clamshell, thus registering the progress of the dredging work. The update is immediately visible in the top and side views. 3D-Design models allow the user to define complex designs.

Teledyne PDS supports a wide range of dredge tools. Next to the standard bucket also clamshells, dredge pumps, drills and any other dredge tool can be used.

FEATURES

Teledyne PDS DREDGE

- Teledyne RESON's products give you accurate, efficient dredging.
- Teledyne RESON is the only supplier of integrated dredge and survey solutions to the dredge and construction market.
- Teledyne RESON provides all the sensors for optimum dredge guidance.
- Products are designed for the dredge and construction environment
- Create high quality and fast results Innovative products
- Easy to extend to other Teledyne PDS applications

Teledyne PDS

Dredge

Bucket sensor installed

Crane rotation sensors

Swivel bucker support

Compact installation also suitable for small cranes

WHY CHOOSE Teledyne PDS ?

- Reliable dredge monitoring software and sensors for your project
- The tool for efficient dredging
- Teledyne PDS flexible software, tuned for standard and special projects.

PLD15745-1

TELEDYNE PDS
Everywhereyoulook™

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Excavator (Backhoe) Dredge

TRIMBLE MARINE CONSTRUCTION SOFTWARE

Trimble Marine Construction software improves productivity and efficiency in underwater construction applications. It provides accurate 3D visualization to assist the operator with underwater construction tasks.

Efficient dredging

Trimble Marine Construction software for excavator dredger applications is a powerful tool to help dredge operators improve productivity and efficiency. The operator and tug captain have a real time overview of the excavator and barge in plan and profile views. Displays include the outline of the excavator body, boom, stick and bucket as well as the barge in real time against the surveyed and design surfaces.

Real time visualization and monitoring

Using the software, the position of the bucket relative to design is constantly tracked and displayed. A color-coded Digital Terrain Model (DTM) highlights the high and low spots relative to design. The DTM is updated in real time from the position of the bucket teeth and the bucket width to track the progress of the dredging work. The update is immediately visible in the plan and profile views. 3D design capabilities and functionalities support the use of complex designs.

Customizable interface

Multiple monitors with independent layouts can be tailored to the needs of the dredge operator. The surface Digital Terrain Model (DTM) is updated in real time registering the progress of the dredging work showing depth, differential and production models all updated according to progress of the bucket.

Cumulative production calculation

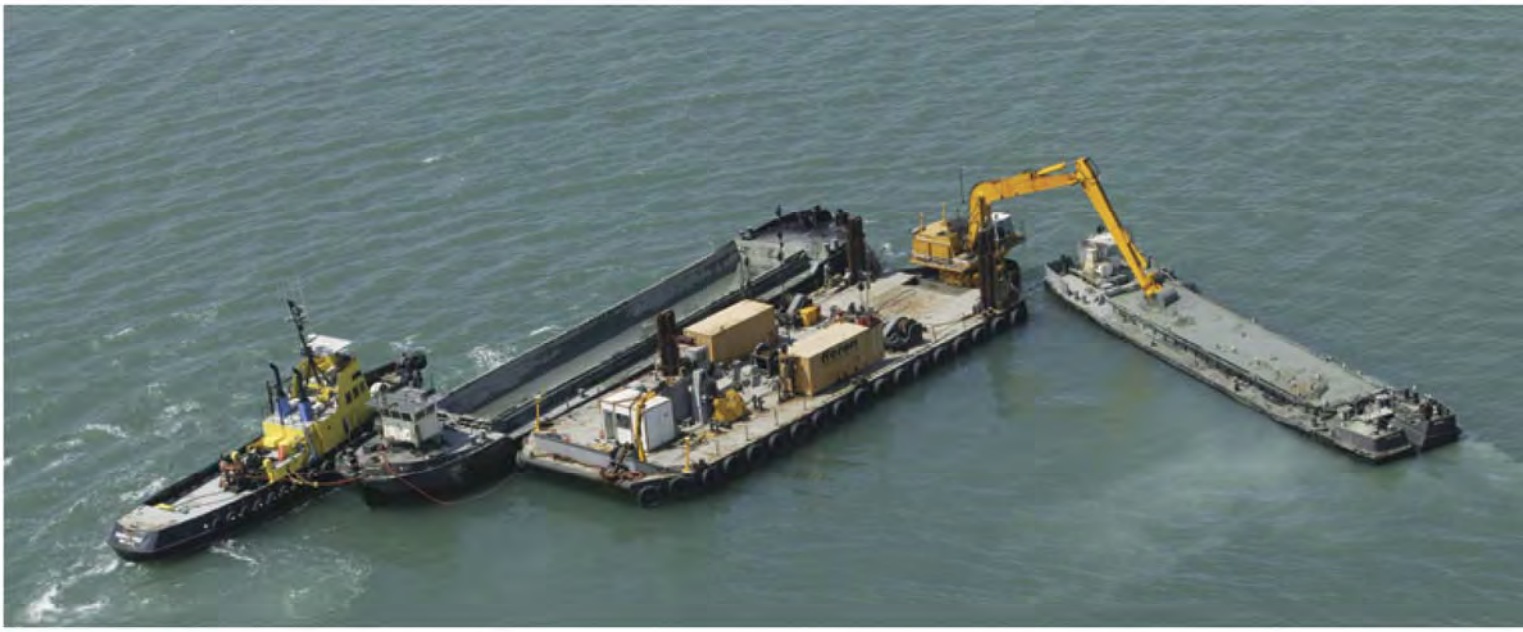
This calculation and reporting feature helps monitor progress so your operators can focus on the task at hand and allow the software to report progress by runline, operator or job. This also makes it easy for project managers who are remote to see accurate progress.

Tool support

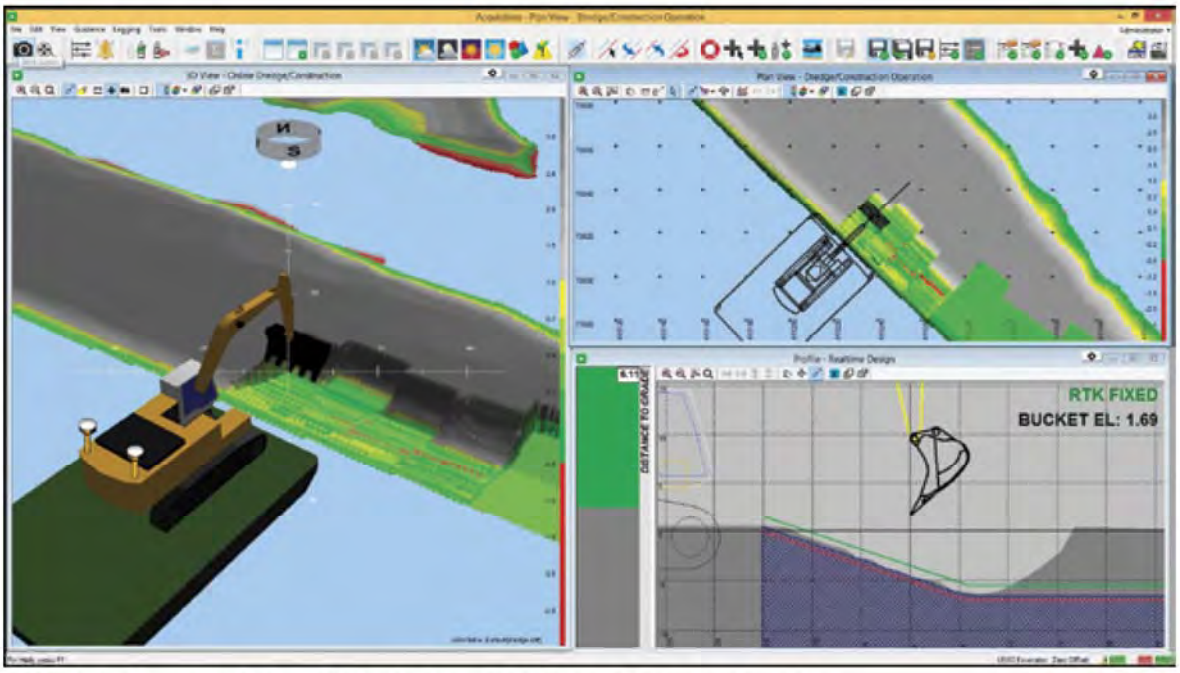
The software supports a range of excavator tools, including standard bucket configurations, clamshell, multi-tine and articulated buckets.

Features

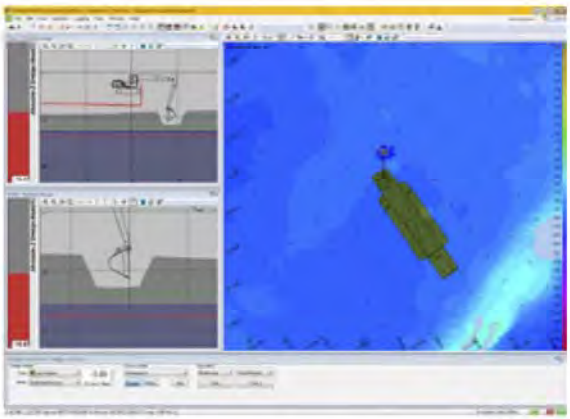
- Robust and reliable solutions maximize uptime
- Supports real time sonar inputs providing as-building capability
- Continuous data logging for as-building and volume reports
- Bucket tolerance visualization provides guidance for accurate, efficient dredging productivity
- Administrator can configure the screens for a specific workflow/user and lock it down for the operator
- Diking mode facilitates material placement operations
- RTK can be used for precise tide and heave measurement
- Create machine or vessel shapes or import models from CAD software including SketchUp® 3D modeling tool



TRIMBLE MARINE CONSTRUCTION SOFTWARE



Trimble Marine Construction software for backhoe excavator dredge application - acquisition view



Trimble Marine Construction software for backhoe excavator dredge application - alternative view

About Trimble Marine

Trimble offers flexible, high-performance positioning systems to meet the unique needs of marine construction on both simple and complex projects. Solutions include both hardware and software, and can be easily integrated into third-party systems. The portfolio includes marine information systems (e.g. Trimble Marine Construction software), GNSS receivers, antennas, radios, encoders, depth gauges and inertial positioning systems.

Trimble Marine Construction software is transforming the way marine operations work by helping build and maintain the world's port, river, canal and other critical infrastructure. Trimble continues to transform this industry's work across the project lifecycle through sophisticated planning and design, advanced automation solutions, site positioning, and real time connectivity.

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